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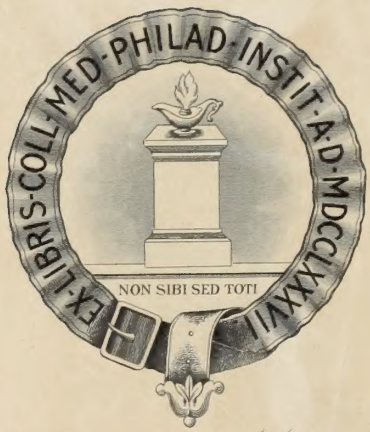

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R.J.Dunglison,M.D.

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VIRGINIA MEDICAL SEMI-MONTHLY.

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Original Communications.

TYPHOID FEVER DIET.

By E. W. ROBERTSON, M. D., Onancock, Va.

One morning a few weeks ago another doctor and I were deploring the deaths from perforation of bowels in typhoid fever of two of our acquaintances in our county, and the doctor gave me his experience with soft-boiled eggs, while an interne in a Northern hospital reported adverse results.

This was father to the thought of writing the following paragraph to the clinicians of sundry hospitals over the country:

Onancock, Va., Feb. 13, 1909.

My dear Doctor:

I am desirous of collecting the consensus of practice in hospitals as to typhoid fever diet during the fever and ten days following. Milk, peptones, pre-digested beef, and albumen water seem to be the proper diet in the fever. What is your practice? Do you give a semi-solid during the fever, such as ice cream, barley, etc.? Do you give a two-minute boiled egg? Have you observed that there was a greater liability to perforation from solids, or semi-solids, than from strictly liquid diet?

In the interest of mankind I desire your answer, and for which I thank you in advance.

Very truly and fraternally,

(Signed) EDGAR W. ROBERTSON.

Thirteen clinicians answered me as follows:

No. 1. John Staige Davis, M. A., M. D., Professor Practice of Medicine and Pediatrics, University of Virginia Hospital.

No. 2. Dr. H. A. Hare, Professor of Therapeutics, and Physician to the Jefferson Medical College Hospital.

No. 3. E. Blumer, M. D., Professor of Principles and Practice of Department of Medicine, Yale University, New Haven, Connecticut.

No. 4. Dr. James M. Craighill, University of Maryland, Medical Hospital, Clinician.

No. 5. William S. Gordon, M. D., Professor of the Practice of Medicine, University College of Medicine, Richmond, Va.

No. 6. Dr. John A. Witherspoon, Professor of Practice and Clinical Medicine, Vanderbilt University, Nashville, Tenn.

No. 7. N. S. Davis, M. D., Professor of Principles and Practice of Medicine and Clinical Medicine, Chicago Medical College.

No. 8. Robert A. McLean, M. D., University of California, Medical Department.

No. 9. Dr. Manfred Call, Professor Medicine, Medical College of Virginia.

No. 10. W. S. Thayer, M. D., Johns Hopkins Hospital.

No. 11. Dr. I. Adler, New York Polyclinic.

No. 12. Dr. William Osler, Oxford, England.

No. 13. William S. Kendrick, M. D., Ph. G., Professor of Principles and Practice of Medicine, Atlanta College of Physicians and Surgeons, Atlanta, Ga.

On such a subject as typhoid fever diet—important to mankind, irrespective to age, sex or clime—I have concluded best to quote the correspondence completely, and as follows:

University Virginia, Feb. 15, '09.

Dr. E. W. Robertson,
Onancock, Va.

My dear Doctor:—In reply to your question with regard to our dietetic treatment of typhoid fever, I have to say that we stick to the liquid diet here. However, we give nourishment two hours during the day in deference to the caloric needs of the body, which we calculate more or less accurately from the ordinary tables.

We have never been convinced that any advantage was obtained by deviation from this

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course, and certainly in case of a fatal issue there is one less cause for regret. We have had very few cases of perforation, but one recently in a young man from your place who, despite the promptest operation by the most skilful hands, could not be saved. One case last year was saved similarly in a colored person, but we have not been able to attribute either protracted debility or hemorrhage or perforation to our liquid diet.

Very truly yours,
(Signed) J. S. Davis.

Philadelphia, Feb. 15, '09.

Dr. E. W. Robertson,

Dear Doctor:—In reply to your letter of Feb. 13th, let me state that you will find the answers to your questions in my Text-Book of Practical Therapeutics, published by Lea & Febiger, of Philadelphia, article on Typhoid Fever.

Very truly yours,
(Signed) H. A. Hare.

Dr. Hare says (12th edition): "Remembering, too, that a typhoid fever patient is subjected to prolonged wasting fever and toxæmia for many days, his nutrition should be maintained by the use of a nourishing diet easy of digestion. In addition to milk, he should also receive one or two soft-boiled eggs each day, arrow root and perhaps thin cornstarch, provided they agree with his digestive powers. If diarrhea is not present, broths may be given, but it must be recalled that Brieger has shown that typhoid bacilli do not readily reproduce themselves and their poisons in peptonized or well digested milk, but do very actively in meat broths or jelly, which has not been acted upon by the digestive juices. Milk diet is therefore evidently better than a broth diet in typhoid fever, and we once more are able to explain an empirical fact by a scientific discovery. There is no reason for using liquid instead of solid foods, except the difficulty of digestion of the latter.

"Alcohol has been used in all stages of typhoid fever as a stimulant, as a giver of force to the system, and as an aid to digestion, but its real value is found when actual depression exists.

"The treatment which was used by the author for many years in his wards of the Jefferson Medical College Hospital has given results which the application of other methods have failed to give. * * * *

"I am one of those who are firmly convinced that for many years we have been making a grave mistake in confining patients suffering from typhoid fever to a purely milk diet. We must recollect that the average adult requires at least 2,500 calories a day for normal existence, and as each quart of milk represents only about 500 or 600 calories, it is evident that for a patient to receive the total number of calories required for the maintenance of his body he must drink not less than four and a half quarts of milk a day. These facts impress us with the utter inadequacy of the milk diet in this disease.

"Again, I can see nothing in the clinical history or pathology of this disease which in any way justifies us disordering metabolism by the institution of a rigid milk diet.

"It has been shown by Wright and his associates that cow's milk contains a greater quantity of calcium salts than does human milk, and that its prolonged administration in large quantities increases the coagulability of the blood. These investigators believe that this may be one of the reasons thrombosis is so frequent a complication of typhoid fever, and it indicates the need of employing the varied diet about to be recommended. The ill effects produced by this excess of calcium salts in cow's milk can be removed by the administration of five to ten grains of citric acid twice or thrice a day. (or lemonade, E. W. R.). It is best, therefore, to administer it for two or three days, and then allow an interval of two or three days to elapse before it is given again.

"It is my custom to give all patients after the first week of typhoid from one to two soft boiled eggs a day in addition to the ordinary allowance of milk, and to vary that diet by the use of curds and whey, rice which has been boiled to a pulp, barley, and wheat, and oatmeal gruel, and a cup of cornstarch with vanilla or some other flavoring substance of like character. As a result, I very rarely see the marked ataxia which is so common a symptom in convalescence from typhoid fever.

"Recognizing that typhoid fever is characterized by deficient secretion of digestive juices, all these patients receive hydrochloric acid and pepsin when proteids are administered, and tak-

ing distase and pancreatin when carbohydrates are used.

"For a number of days after the patient begs for solid food it should not be allowed, for he will ask for it long before he should have it; but, if the temperature remains normal after nine days, the soft part of stewed oysters may be used and the patient gradually brought back to an ordinary diet."

Dept. of Medicine, Yale University,
New Haven, Conn., Feb. 18, '09.

Dr. E. W. Robertson,
Onancock, Va.

Dear Sir:—Your letter of February 13th was referred to me by Dean Smith. There are five physicians who attend at the New Haven Hospital, and they do not all diet their typhoid fever patients alike. For all practical purposes the diets may be divided into two classes.

1. Albumen water as the mainstay, with clear broths, thin cereal gruels, meat juice, well-boiled rice, tea or coffee and ice cream during the fever, and practically the same thing for ten days afterwards.

Individual members of the staff vary slightly from this. One member gives a good deal of milk sugar. Another member gives a good deal of Mellin's Food in milk on account of the maltose it contains. One member gives baked potatoes and even scraped beef during the first ten days of convalescence.

2. Practically the diet given by Osler in his Prace, *i. e.,* milk and albumen water only, with morning coffee if desired, during the febrile period. During the first ten days of convalescence milk toast, soft-bolled eggs, custards, junket, etc.

If this does not answer your question sufficiently I shall be glad to write you further details. Very truly yours,

(Signed) E. Blumer,
Prof. of Principles and Practice.

Baltimore, Md., Feb. 14, '09.

Dr. E. W. Robertson,
Onancock, Va.

My dear Doctor:—I have yours of February 12th, and am glad to give you any information I can about the feeding of typhoids. There is, I may say, almost no time in the year when we have not a few cases of typhoid at the University of Maryland Hospital; of course, in the fall we have a large number, generally thirty-five or forty cases, all the time.

The feeding consists mostly of milk and liquid diet of various kinds, most anything that can be strained through a cheese cloth. An egg morning and night so soft that it can be sucked through a glass tube. When the fever has subsided and the *tongue cleaned,* say, after five days of normal temperature, we try them with an egg morning and evening, and about the seventh day give them a small piece of soft toast made from *good bread;* the next day a little vanilla ice cream. They are gradually worked along on a semi-solid diet until about the tenth day of normal temperature, when a little meat is allowed. It is my object in feeding typhoids to give them all that they will stand, without disturbing their weak digestion, as indicated by gas, etc. I believe that not a few typhoids are starved out entirely too much, and their resisting power reduced so much that if any strain from the disease be put upon them the weakened heart cannot stand it and they die. I also am very careful about the abdomen not being distended if I can prevent it, and think that five grains of salol every six hours (not in capsules) helps immensely in keeping down the gas. If we do have tympanites amounting to anything we cut off practically all food for a while and then commence to feed again carefully. Sometimes under these conditions it seems wise to cut out the milk.

Other forms of foods I am fond of using are oatmeal gruel, thin soups, and I find grape juice and orange juice help out.

It has often been a question in my mind whether all typhoids would not be better off *without milk;* also, whether they would not stand a three-minute egg three times a day and possibly a semi-solid diet (selected).

Yours very truly,

(Signed) Jas. M. Craighill.

Richmond, Va., Feb., 16, '09.

Dr. E. W. Robertson,
Onancock, Va.

Dear Doctor:—Dr. McGuire has referred to me your letter of the 13th of February to him. The diet which I advise in typhoid fever is liquid; is varied according to the requirements

of each case, and is intended to represent all of the proximate principles. The amount of food and the intervals of feeding depend upon circumstances. Jellied eggs and simple frozen cream, with sugar and vanilla, are allowed in appropriate cases. Fruit juices are advised. Sweet and butter milk, albumen, animal broths alone, or thickened with thin oatmeal, barley, or rice gruel are useful. At times I allow wine jelly and such articles as are liquid when swallowed and easily digested. I think it a mistake to confine a patient to proteid food, as it may promote acetonuria. As I have quite strictly adhered to the articles mentioned, I can give you no data as to the influence of solid food upon perforation. The return to semi-solid or solid food is made very gradually in from one to two weeks, as a rule, as the case indicates from the symptoms and signs. I am

Very truly yours,
(Signed) Wm. S. Gordon.

Nashville, Tenn., Feb. 16, '09.
Dr. E. W. Robertson,
Onancock, Va.

Dear Doctor:—Your request for my experience in the feeding of typhoid cases received. In reply will state that I adhere to a strict liquid diet throughout the attack and for ten days of convalescence, using beef juice (not beef extracts), egg albumen, animal broths, occasionally broths with cereals, strained, and butter milk. I have found sweet milk increases the gas and digestive disturbances so universally that I never prescribe it in these cases. If the diarrhea is excessive I adhere to beef juice and egg albumen, leaving off the broths. After twenty-five years' experience the above diet has proven in my hands the most satisfactory, in the use of which I have little tympany and few cases of hemorrhages or perforation, especially those cases where strict rest in bed can be had from the beginning. I am unalterably opposed to solids or semi-solids and sweet milk in most cases. Hoping this is full enough for your purpose, I am, Very sincerely yours,
(Signed) J. A. Witherspoon.

Chicago, Feb. 17, '09.
Dr. E. W. Robertson,
Onancock, Va.

My dear Doctor:—You will find the subject fully discussed in my book on Diet in Health and Disease, one of the Systems of Physiologic Therapeutics.

I usually give milk exclusively, with orange or orange juice or grape juice, for those who are very sick know very little of what they are taking, and milk is easiest given. Moreover, it produces in the gastro-intestial tract by abnormal fermentation less toxic matter than other foods. But I do not hesitate to give milk and flour gruel or beef tea or chicken broth. The latter not as foods so much as condiments, or to give a variety to those who crave it. A soft egg or a little custard, I am sure, is harmless in most cases. However, if the kidneys are quite inactive, and there is albumen in the urine, I feel that milk alone is safest.

I usually begin to shift from the strict milk diet after the temperature has been normal for six or seven days, using first the variety already mentioned, and later other soft and semi-solid foods. Very truly yours,
(Signed) N. S. Davis.

San Francisco, Feb. 20, '09.
E. W. Robertson,

My dear Doctor:—Your note of February 13th has just been received. I am not at present connected with the public hospital here, and my opportunities for forming an opinion relative to the subject of your inquiry are limited. My practice, however, has always been to confine my patients to a fluid diet in typhoid fever.

Yours truly,
(Signed) Robt. A. McLean.

Richmond, Va., Feb. 23, '09.
Dr. E. W. Robertson,
Onancock, Va.

My dear Doctor:—Dr. Johnston forwarded me your letter concerning the diet of typhoids.

During the course of the fever and for five or ten days thereafter, I order what is practically a liquid diet. Should the case be one of short duration, with subsidence of splenic enlargement, an increased urine, and no contra-indications to an increased feeding, I may not wait for such a long time; this is also true in cases that have run a protracted course with the pulse rate still high and the temperature flirting around the base line, but with evidence of infection having subsided.

Butter milk, sweet milk (plain or modified), rarely predigested; albumens (orange, lemon), barley or rice water, every two or three hours, except during the night when asleep.

What I consider to be of equal importance is a known amount of water in the twenty-four hours. My custom is to order not less than six ounces of water every two hours, and as much in addition as the patient will take; where they will not ingest a sufficient amount of water I order it given per rectum or beneath the skin, depending on the urgency of the case and the condition of the bowels. I rarely use peptonoids or peptone.

After the temperature has been normal, usually for a week, I allow a jellied egg, scraped beef, and, in a few days thereafter, a small baked Irish potato if dry and mealy, bread, etc. During the latter days of the fever ice cream is occasionally given.

Hemorrhage, perforation and complications, of course, make a change in the above procedure necessary. With the above diet and careful mouth toilet before and after each feeding, the cases I have seen have usually pursued a mild course; hemorrhage small, and a few alarming cases do sometimes occur; perforation is a rare occurrence. Of course, perforation may have occurred and been unrecognied, but none of my fatal cases have died with symptoms or signs of perforation.

As I have never used the solid diet, or the semi-solid throughout the course of the fever, I am unable to give any opinion on the greater liability of such cases to perforate.

I would like to add that the majority of cases of typhoid that have come under my observation in Richmond have been of a mild type of infection.

If the above information is not complete enough for you I will be glad to add thereto as you may suggest. Very truly,

(Signed) Manfred Call.

Baltimore, Feb. 18, '09.

Dear Dr. Robertson:—My views on the feeding in typhoid fever are better expressed than I could write to you in the volume of Progressive Medicine, which I am sending you by express to-day. Please return it to me when you are through with the article. The views which I had then, ten years ago, are exactly the same as they are to-day. I always feed my patient and not the disease, and the majority of my patients have a fairly varied diet, the basis of which is that suggested by Dr. Shattuck. Most of my patients have several soft eggs and a little soft toast in the day. I am sure that they are better for it. It can be shown experimentally that more liberal feeding than that which is commonly allowed saves a certain amount in tissue loss. Yours sincerely,

(Signed) W. S. Thayer.

Dr. Thayer, in Progressive Medicine, Vol. I, pages 332-333, in the first following paragraph quoted, would seem to be, a little venturesome, but the second paragraph greatly qualifies, so as to be put on a thoroughly nourishing diet, consistent with the minimum excreta. I quote:

"In diphtheria or pneumonia or febrile tuberculosis do not we make every effort to induce the invalid to take as much as he can bear of a simple, easily absorbable and nourishing diet? And yet, in typhoid fever, we are restrained by a vague fear that any departure from the customary regime is, for some reason or other, dangerous. What ground have we for this fear? The ordinary answer is the quotation of a case where, after a long course of fever, with a much restricted diet, some indiscretion has produced a sudden rise of temperature with alarming symptoms. An indiscretion in diet may produce such symptoms in any condition of severe physical exhaustion, but the reviewer has never seen anything to suggest that this is more common in typhoid fever than in any other similar condition."

The following qualifies: "Bearing in mind the frequency of intestinal lesions, we should, of course, avoid substances which leave an undue residue, but that the general course of the case would improve, that convalescence would be quicker, that lives would actually be saved, if, as Shattuck says, we paid more attention to our treatment of the patient than to that of the disease, as such, the writer is convinced."

The following is Dr. Shattuck's diet, as endorsed by Dr. Thayer, in Progressive Medicine, Vol. I, p. 333:

"Typhoid Diet.—1. Milk, hot or cold, with or without salt, diluted with lime water, soda water, Appolinaris, Vichy; peptogenic and peptonized milk; cream and water (i. e., less albumen), milk with white of egg, slip butter milk,

Koumyss, Matizoon, milk, whey, milk with tea, coffee, cocoa.

"2. Soups: Beef, veal, chicken, tomato, potato, oyster, mutton, pea, bean, squash, carefully strained and thickened with rice (powdered), arrow root, flour, milk or cream, egg, barley.

"3. Horlick's Food, Mellin's Food, malted milk, carnipeptone, bovinine, somatose.

"4. Beef juice.

"5. Gruels: Strained corn meal, crackers, flour, barley water, toast water, albumen—water with lemon juice.

"6. Ice cream.

"7. Eggs, solf-boiled or raw, egg-nog.

"8. Finely minced lean meat, scraped beef, the soft part of raw oysters, soft crackers with milk or broth, soft puddings, without raisins, soft toast without crust, blanc-mange, wine jelly, apple sauce and macaroni."

New York City, Feb. 18, '09.

E. W. Robertson, M. D.,
Onancock, Va.

Dear Doctor:—In answer to your letter of February 13th, I wish to say that in the dietary treatment of typhoid fever, as well as in medical practice generally, I have no hard and fast rules, nor am I committed to any strictly routine treatment. I am guided entirely in each case by the conditions as found in the individual. The principle upon which, as it seems to me, the diet of typhoid fever should be based is this: That the food should be highly nutritious, easily assimilated and absorbed, principally in the stomach and duodenum, leaving as little fecal remnants as possible, so as not to embarrass more than can be helped the inflamed and ulcerated lower intestine. In the great majority of cases these conditions are fulfilled by milk in its various forms, broths with oatmeal or barley strained, the whites of eggs beaten to foam and mixed with the milk in the shape of eggnog; also, with the water and the broths (my typhoid fever patients get the whites of from six to ten eggs a day). As a rule, my patients can take from sixty to eighty ounces of this diet per day. Fluid, specially water, must be given in sufficient quantities to keep the daily urinary excretion up to at least 1500 cc. A diet on these lines is kept up until there is good reason to believe that the intestinal ulcers are healed, when we gradually introduce easily digestible solids, but, for some time still, avoid such articles of food as are apt to leave massive fecal remnants, or which tend to dilate the ileum by gas. With this regime, whether by luck or whether on account of the diet, we have been singularly free from perforations.

Yours very truly,
(Signed) I. Adler.

Carte Postal.—Rome, Feb. 25, '09.

Dear Doctor:—I am off for the winter, during the Southern European chirrup, etc. You will find in the new sixth edition of my textbook just out my views on diet in typhoid fever. With kind regards. Yours,
(Signed) Wm. Osler.

Let me have your paper when published.

I quote from "The Principles and Practice of Medicine," by William Osler, M. D., Regius Professor of Medicine, Oxford University (Typhoid Fever), page 99.

"(b) Diet.—Milk, eggs and water are the essential foods during the febrile period. An adult receives four ounces of milk, diluted with two ounces of lime water or soda water, every four hours; and four ounces of albumen water, made from the white of one or two eggs, every four hours. In this way he is fed every two hours. The juice of half a lemon or an ounce of fresh orange juice is added to the albumen water, which may be sweetened with a little sugar. The great majority of our patients have this diet alone during fever. Whey is substituted for the milk if there are curds in the stool, or if there is much distension, or if the plain milk disagrees in any way. If necessary, the milk is cut off altogether, and the albumen water increased. Butter milk, boiled milk, koumiss, or peptonized milk will be used. The beef extracts, meat juices, and artificially prepared foods are unnecessary, and in private practice, among people in moderate circumstances, add greatly to the expense of the illness. Such a diet is simple, reduces the work of feeding to a minimum, and agrees with the great majority of all patients. Water is given at fixed intervals. A good plan is to have a jug of water beside the patient and a tubing with a glass mouthpiece, so that he can drink as much as he wishes. A washing out plan of treatment is advised. * * * * The water causes polyuria, and is a sort of internal hydrotherapy by which the toxins may be washed out.

Barley water, lemonade, or iced tea may be used. A small cup of coffee in the morning is very grateful. Bouillon or strained vegetable soup may serve as a change. Ice cream may be taken at any time and is an agreeable variation, particularly for children.

"It is possible that we may give too much food. Of late years the disease has been treated by what has been called therapeutic fasting —little or no food, only water.

"Alcohol is unnecessary in a great majority of the cases. Of late years I have used it much less freely; but when the heart is feeble and the toxic symptoms are severe, eight to twelve ounces of whiskey may be given in the twenty-four hours."

Atlanta, Ga., March 24, 1909.

Dr. E. W. Robertson,
Onancock, Va.

Dear Sir:—Without going into any details, as I have not time, I will say that I keep my patients on purely a liquid diet during the fever, and for ten days after convalescence is established. I have never given semi-solid or solid diet during an attack.

Yours very truly,
W. S. Kendrick.

The above seems to represent the medical practice of prominent clinicians of national renown of different sections of our land; and while there is some discrepancy of views, I think all agree in supporting the patient and not being oblivious of the intestinal lesions being liable to trauma from undigested food products or maximum of dejecta.

I find that the great majority of my correspondents advocate liquid diet, and milk and eggs as the chief dietary. One disapproves of milk on the ground of its causing tympany. But the great majority of patients taking that diet with impunity against the minority is obvious. The precautionary measure cited is to discontinue in case of curds, tympany, etc., but until these symptoms arise, so long as our patient is doing well, and is nourished, it is useless to ignore such a valuable foodstuff. I suppose it could be shown that most any other of the generally advocated foods listed could cause, seemingly, a disagreement with the digestion. Broths might act as a culture medium, eggs are regarded suspicious sometimes, and we are advised to cut off nearly everything in tympany, etc. Even water is possibly overtaken sometimes.

I know of but two guiding lines in typhoid fever diet, and they are, to nourish the patient, and to have respect for the local conditions in the digestive tract.

Finally, I believe I would be safe in advising this proposition: Give me a sensible nurse, and an obtusely bent glass feeding tube, and I would say to her: "Give my patient anything that may be easily taken through it; and if curds (where milk is staple diet) occur cut off milk, using in its stead whey with essence of pepsin; or, reduce even to water only for a few days, if tympany, etc., arise."

My correspondents show all these points. If my paper throws any important light on the feeding of typhoid fever patients, and be the instrument of saving lives thereby, it has served a salutary end. Very little originality on my part. I have simply thrown on the light.

THE SURGICAL TREATMENT OF HEMORRHOIDS.*

By LLEWELLIN ELIOT, M. D., Washington, D. C.

Many cases of hemorrhoids, those of the milder and more passive character, frequently respond to medical or palliative measures, such as applications of cold water, solutions of astringents, ointments, suppositories, and dilatation of the sphincter. It is such cases as these that cause delay in treatment in the more severe cases, and upon which the advertising man bases his claims to cure without the use of the knife, or any loss of time from business.

Since hemorrhoids are, in the majority of instances, primarily due to constipation, disorders of the liver, and pressure upon the bowel, correction of these faults assists in relieving the trouble, but cases rebellious to such a course are surgical.

The surgical procedures employed for the treatment of hemorrhoids are the ligature, the incision, and the excision. Whether the injection treatment of hemorrhoids should be considered surgical or medical is an open question; true, it requires the use of the hypodermic needle, still it can hardly be called a surgical operation any more than the use of the hypodermic syringe for ordinary purposes, notwith-

*Read at a meeting of the Medical Society of Georgetown University, on February 13, 1909.

standing the fact that thousands of cases have been cured in this way.

The use of an anæsthetic is necessary, as a rule, in rectal surgery; this may be local, by eucaine, cocaine, sterile water or cold, or it may be general, by nitrous-oxide, oxygen-chloroform, chloroform or ether. This point will be determined from a consideration of the temperament of the patient and the character of the operation; a nervous, excitable patient should have a general anæsthetic, while a strong, impassive subject may decline to take any; my preference is for a general anæsthetic—chloroform almost invariably—for the following reasons: Full dilatation of the sphincter is permitted; one can work more deliberately; the patient is entirely passive; loss of blood will not excite him, nor will it cause the operator to hurry or bluster. One word of caution—never trust the admin istration of a general anæsthetic to a nurse, for very few are competent for the work.

In operating for hemorrhoids, two assistants are necessary, one for the anesthetic, the other to render such assistance at the field of operation as may be needed; a nurse, unless specially trained for these duties, will not take the place of a graduated physician.

The dilatation of the sphincter must be complete and is effected by the speculum or the graduated rectal diltaor; the speculum must have power enough to paralyze the muscle, but this power must not be exerted to the point of rupturing the mucous membrane or the muscle; its action, however, is not uniform upon the muscle, since the power exerted may be greater upon some parts than upon others. The rectal dilator or calibrator, on the other hand, exerts a pressure upon the entire muscle, which is equal upon every portion; therefore, this instrument is preferable to the speculum.

To avoid the annoyance of having a discharge of fecal matter during the operation, a thorough cleansing by purgatives and enema is necessary, and even then a strip of gauze pushed well up in the rectum serves a good purpose and its withdrawal causes no harm.

For the incision or the application of the ligature, it is often enough to have the patient stand and bend over a chair or a table, but the exaggerated lithotomy position is preferable for this, as well as for all operations.

The patient must be prepared for operation with the same care exercised in any other class of operations, but he should have a final rectal irrigation with a solution of boric acid just before the anæsthetic is given.

In rectal diseases palliative measure are not, properly speaking, conservative surgery. While this is true, there are a great many persons suffering from hemorrhoids who lack the moral courage to submit to an operation for a trouble that rarely endangers life. Aside from motives, which frequently urge the adoption of such measures by the advertising man, or the timid operator, physical conditions, nervous states, social engagements and business arrangements operate to the delay or postponemet of radical measures. Many patients reach a ripe old age, carrying the while a bunch of hemorrhoids as large as half the size of an adult fist, with only temporary and occasional inconvenience; these patients are those who have refused surgical aid and rely on ointments, suppositories, astringents, and rest in bed for relief, nor can we blame them. Hemorrhoids seldom, if ever, result fatally; where death occurs it is the result of other causes. When, however, the loss of blood from hemorrhoids causes anæmia and is an exhaustive drain upon the system, palliative treatment cannot cure, operation is demanded.

The incision and the ligature operations do not appeal to the younger men of the profession to-day, for the reason that there is no great flourish of trumpets or sitting in the lime light; they are too old-fashioned, but they are good measures.

The incision is for the thrombotic pile and as it is entirely outside of the rectum, it is not necessary to dilate. The knife is thrust into it and the clot turned out. Very little after treatment is required.

In the application of the ligature, it is necessary to draw the pile well down, and while holding it tight a knife or a scissors is used to make a groove where the ligature is to be applied. This ligature may be of silk or stout catgut and is drawn tight in tying. This is the simplest form of the operation. In a few days the cure is complete.

The subcutaneous ligature of Ricketts I have never tried; he reports many successes with it, but it requires more time than other methods

for cure. The ligature encircles the pile; only one opening is made, for the needle emerges from the opening of its introduction and the knot is pushed in; the operation resembles the subcutaneous operation of Keyes for varicocele.

The ligation of hemorrhoids is a popular operation; Allingham and Mathews are its strongest advocates.

Allingham draws the pile down and with a pair of sharp scissors separates the pile from its connection with the muscular and submucous tissues; this separation is continued until the base or pedicle is formed of vessels and mucous membrane only. A silk ligature is tied tightly around the pedicle and the pile cut off; simple piles drop off after ligature without cutting; skin tabs are cut away.

Mathews puts his patient in the Sims position, draws down the large tumors with a forceps, makes a groove around the base, then, with a curved needle carrying a stout silk, transfixes the tumor at its base; the ligature is then equally divided, the needle removed, and the ends tied, first on one side, then on the other, at the bottom of the groove. The tumor is then cut away with scissors; the amount of the tumor cut depends on the judgment of the operator. Small tumors are tied and allowed to fall off without cutting.

The clamp and cautery operation originated with Cusack about 1840; his cautery was nitric acid. Henry Smith used the actual cautery in 1861 or thereabouts.

Properly done, it is a good operation; it seals the wound against primary hemorrhage and against the introduction of septic germs. The objections raised against it are the liability to hemorrhage, the occasional production of stricture, and the pain which follows the operation. The clamp may be Smith's, Gant's, Kelsey's or Ware's, but whichever one is used, it should be powerful enough to crush the pile at its base and not permit slipping. The cautery is either the Paquelin or the electric, or some modification of these. One should remember that the Paquelin instrument is not a plaything, and making one of it will be the cause of it not being in working order when it is next wanted.

The pile is drawn down, a groove or a sulcus made, the clamp adjusted along the groove, the pile cut off with the knife or a scissors, the cautery applied, and the stump charred. If there are other piles they are treated in the same way. A Pennington tube is inserted in the rectum; this is to prvent the accumulation of gas and also to exert pressure to prevent any hemorrhage. The wound is dressed with a solution of boric acid or bichloride of mercury, or other antiseptic. The patient will be well in three weeks.

The operations most popular to-day are the Whitehead, or one of its modifications, and the suture-clamp; with the orificial class Pratt's operation is still popular.

The Whitehead operation consists in the removal of the entire lower one and a half inches of the mucous membrane of the rectum—that is, the entire hemorrhoidal area. The sphincter is dilated completely, the mucous membrane is divided with scissors along the skin line, the dissection is then made so as to expose the external sphincter and part of the internal, the mucous membrane with the hemorrhoids attached is drawn down and below the margin of the skin. The mucous membrane above the hemorrhoids is divided by a series of transverse cuts, the free margin being sutured to the free margin of the skin. Thus the entire area is removed. The dissection is done with a dull curved scissors, a raspatory or a knife handle. The only hemorrhage of any moment, if there should be one, comes from the middle hemorrhoidal arteries; it is easily controlled by twisting. Whitehead uses sutures, carbolized silk, and never takes out the stitches. His dressing is iodoform and an icebag. The bowels move on the fourth day and the patient goes to his work in two weeks. Whitehead has performed this operation several hundreds of times with satisfactory results. His claims, however, for shortness of time in operating, and a minimum amount of bleeding, have not been confirmed by American operators; possibly they did not follow directions as he laid them down; we must remember also that Whitehead is an expert in this operation.

Tuttle has modified this operation. He makes a small incision at the posterior commissure of the rectum, inserts a pair of blunt-pointed, curved on the flat scissors beneath the mucous membrane to the superior margin of the intestinal sphincter, and gradually works down; this method of separation is the reverse of the Whitehead. He goes down on one side and

then passes the scissors up on the opposite side and does the same separation. Tuttle uses a continuous suture of catgut and dresses as usual for wounds in this region with antiseptics.

Pratt's operation, which has, to my mind, nothing to induce an endorsement, is started above, dividing the mucous membrane, and is worked down; the internal sphincter is drawn down and all redundant skin and muco-cutaneous tissue around the anus are removed. Exstrophy frequently follows this operation.

I do not believe that Whitehead's operation has been clearly understood; otherwise there would not have been the severe criticisms which it has received, nor would there have been so many substitutes for its advance.

The operation which has given me uniformly good results is the "suture-clamp operation," whether it be done with the Erwin, McLean, or Earle instrument. In the first two, the sutures are interrupted, while in the third the suture is continuous. McLean's clamp has slits upon the upper surface of the blade for passing the sutures, but the blades are not parallel, thereby making an uneven pressure upon the base of the pile. Erwin's clamp is constructed in the same manner as McLean's, but the blades close parallel. Earle's clamp has no slits, closes with parallel blades. His latest model is curved, with a small hook at the end of the blades to facilitate tightening the sutures.

Earle draws the tumor down with a forceps, applies the clamp, cuts off the tumor, and passes the suture around the clamp a sufficient number of times to close the wound made, and ties the two ends. If there are several tumors he divides the mucous membrane at the posterior commissure and anchors his suture there; the tumors are brought down and held with forceps, then attacked one after another, the same suture of heavy catgut, closing all the wounds, to be tied at the point of original anchorage.

Erwin's operation brings the tumor down with forceps, the clamp is then applied, using such pressure as judgment dictates, the sutures are passed, and the tumor cut away, the sutures are tied and the clamp is released. The tumor may be excised before passing the sutures if desired. I use catgut and allow the sutures to fall away.

In any of these operations the gauze, which was passed into the rectum at the commencement of the work is now withdrawn, the wounds dressed with iodoform, boric acid or a solution of the bichloride of mercury. Opium is given to relieve pain and procure rest. The opium is best given in the form of a suppository in combination with extract of belladonna. On the fourth day, it is usual for the attendant to give a dose of cascara; when there is an inclination for the movement, warmed sweet oil is injected into the rectum, in order to prevent pain and tearing of the sutures by hardened feces.

On the same day the patient is out of bed and in two weeks is discharged from treatment.

1106 *P Street, N. W.*

TUBERCULIN IN INCIPIENT AND CONCEALED TUBERCULOSIS.

By M. D. HOGE, Jr., M. D., Richmond, Va.

Many physicians are anxious and willing to try for themselves certain approved diagnostic or laboratory methods, but owing to lack of plain and explicit directions hesitate to do so. I gather from conversations with doctors that the use of the tuberculin test for diagnostic purposes is one of them.

When we consider the importance of the subject as regards treatment alone—for it is admittedly in the early diagnosed cases that the best and most numerous results are obtained—we should hail with delight a method which will not only confirm the physical findings, but in most cases antedate them. Not only is it true of phthisis pulmonalis, but in obscure or concealed tuberculosis of the bones and internal organs are the results equally satisfactory.

There are a large number of preparations of the tubercle bacilli used and recommended, such as "T. O.," Koch's old tuberculin, a glycerine extract of the tubercle bacillus; "B. F.," a filtrate of human cultures; "B. E.," or Koch's new tuberculin, an immersion of ground bacilli in glycerin and normal saline solution; "T. R.." a suspension of ground bacilli in a glycerin solution; "T. P.," a precipitate used in the conjunctival test; a tuberculin ointment which is rubbed into the skin. These and some others are sold by the Alexander Company, but certain State laboratories make and sell their own tuberculins, notably the Health Department of the City of New York. So there are no lack of places from which the desired products may be obtained by any one wishing to use them.

Personally, my experience has been limited to the "T. O.," or Koch's old tuberculin, because of the ease of application, entire absence of untoward after symptoms, and positiveness of results.

The tuberculin is procured in sealed glass tubes, generally holding 1 c. c. This strength is used by some, but in this concentrated form the reaction is not as delicate; consequently I dilute the original 1 c. c. with 3 c. c. of sterile normal saline solution (about 45 drops) to which is added a very minute drop of lysol. This gives a twenty-five per cent. solution of tuberculin, which will keep for several months if put in a sterile glass-stoppered bottle, and placed in a cool room.

Now, as to the method: The skin of the arm or forearm is washed with soap and water, then with alcohol and allowed to dry. Two small superficial scarifications, two inches apart, are made on the clean skin, with a lancet or needle, just deep enough to avoid drawing blood; the tuberculin solution is carefully applied to one place, allowed to remain fifteen minutes, and gently wiped off with a piece of sterile gauze or cotton. Nothing is put on the second scarification because this is used as a control. If the reaction is positive, during the first twenty-four hours there will be some rise of temperature from 99 1-2 degrees F., to 100 1-2 degrees F., slight frontal headache, and on the inoculated spot there will be the characteristic pinkish or reddish induration, circular in shape, about one inch in diameter, the central portion somewhat elevated, and not infrequently showing minute vesicles.

If on the contrary, the reaction is negative, none of these symptoms or signs will be observed, and both scarified places heal over in from one to two days as any other scratch would do.

Aside from several phthisical patients on which the test was satisfactorily used, and the results later confirmed by physical diagnosis and sputum findings I wish, briefly, to report one case which came under my observation:

O. J., white; male, age 27; suffered from vesical tenesmus, the urine constantly containing blood and pus. Suspecting tuberculosis, though the lungs were negative, the tuberculin test was applied and the reaction was positive. Three weeks later tubercle bacilli were found in the urine, after repeated examinations had been made, thus proving the value of the test, and confirming the diagnosis.

308 *East Grace Street.*

EMPYEMA OF THE MAXILLARY SINUS.*

By CLARENCE PORTER JONES. M. D., Newport News, Va.

Oculist and Aurist to Several Hospitals, etc.; Councillor to the Medical Society of Virginia, etc.

The maxillary sinus, or better known as antrum of Highmore, is, of all nasal accessory cavities, most often involved by suppurative disease. It is a trouble so universal as to embrace practically all human beings some time in life in some stage, though over ninety-five per cent of cases are undetected.

The sinus is a large triangular shaped cavity hollowed out of the body of the maxillary bone; its apex, directed outward, is formed by the malar process; its base, by the outer wall of the nose. Its walls are everywhere exceedingly thin—its roof being formed by the orbital plate, its floor by the alveolar process, its anterior wall by the facial and its posterior by the zygomatic surface. Its inner wall, or base, presents, in the disarticulated bone, a large irregular aperture which communicates with the nasal fossa. In the articulated skull this opening is made much smaller by the articulations of the ethmoid, inferior turbinated and palate bones. In the living subject it is reduced further to a small opening, the osteum maxillare, situated underneath the anterior end of the middle upper portion of the turbinate bone, in a single depression on the naso-antral wall containing the openings of the frontal and anterior ethmoid sinuses or cells—these two latter being above. Thus the opening of the antrum is as far away as possible from the floor. This apparently renders the drainage of the secretions quite difficult or impossible, except as they overflow when the antrum is filled. This is not the case, however, as there is but little secretion in the sinus in health—only enough to keep the mucous membrane moist. The epithelium of the antral mucous membrane is of the modified columnar ciliated variety. The wave-like motion of the ciliæ serves to carry the scanty secretions to the osteum maxillare at the top of the sinus, where it is discharged through

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the infundibulum into the middle meatus of the nose..

Bear in mind the last statement; also that the osteum maxillare, or naso-antral opening is the lowest of the three accessory sinus openings in the anterior part of the nasal chambers, viz.: the frontal sinus, whose opening is the highest, the anterior ethmoid cells, whose opening is slightly above and behind—all three openings being so close together that in over twenty per cent. of subjects there is a common duct or opening. Furthermore, bear in mind that a protracted pus formation or collection within the antrum destroys the cilia on the cells of its lining (thus destroying nature's drainage). The second bicuspid, and first and second molar teeth are in close relation to the floor of the sinus; sometimes their roots project into the cavity with no covering other than the mucous lining of the cavity. In such cases an abscess at the root of either tooth will set up a purulent formation. Or by means of the lymphatic system, abscess of the gums or even the crown of the teeth may cause antral empyema. Thus the infection from dental origin is believed to be about equal in occurrence to nasal. The superior wall or roof of the sinus is crossed in its central portion by the infra-orbital nerve, which lies in a groove on the broad inferior side of the plate of bone. It is covered by mucous membrane, and may be easily injured by injudicious use of the curette.

The anterior ethmoid cells are by far the most common of the nasal accessory cavities to become infected by germs from the atmosphere, and are the seat of a purulent inflammation, as is apparent in severe "colds in the head."

Next in frequency is the frontal sinus. But as Nature is kinder to these cavities in making their outlets or ducts at their most dependent portions, their drainage is well nigh perfect. Thus in ninety-five per cent. of the cases, purulent inflammation in these cavities is self limited, disappearing in about two weeks, either with or without treatment.

But not so with the maxillary sinus; its opening beneath the other cavities and at its highest portion, by its peculiar shape receives often a goodly portion of the discharge from the upper cavities. The antrum is just about the poorest drained cavity of the human body, and the ethmoid or frontal cavity may have been the seat of violent inflammation, and become well months before the antral trouble is ever brought to our attention.

The *predisposing* causes are largely embraced in the conditions which interfere with drainage and ventilation of the cavity. Constitutional disease, or any lowered vitality have their role to play. Any suppurative disease of the buccal cavity, through the lymph stream, may be causative, as has been previously mentioned. Caries of a tooth root; polypi and other foreign bodies in the nose, especially packing the nose with gauze after turbinectomy, or other nasal operations, are also causes. Reflex venous stasis from turbinal pressure on the septum is believed to be a most potent predisposing cause. The exciting cause is one or more of the pus-forming micro-organisms. An interesting fact is that the infection often runs as a low grade inflammation, doing little if any real harm for weeks, months or years, and then suddenly becomes active. Antrum disease following an unusually severe attack of grippe or typhoid fever is, as a rule, most stubborn, and yields less promptly to treatment.

The pathological changes occurring in the mucous membrane and bony walls of the antrum in the course of suppurative inflammation are what one might expect in a mucous lined cavity—especially one which has next to no natural drainage. A few cases on operation exhibit a membrane not unlike that of diptheria, but it is not likely to be specific in character.

The exudation may be serous, fibrinous, seropurulent or purulent in character, according to the intensity of the process. At first the submucous tissue is infiltrated with serum, while the surface remains dry. Next the meshes of the submucous tissue become filled with leucocytes. The capillaries become distended, making the membrane red in consequence. The critical stage in the process is now when the leucocytes escape through the epithelial lining, and infection becomes virulent, destroying the cilia of the epithelial cells. The valve-like opening becomes closed by pressure as a result of swelling, and the case can never be relieved without surgical procedure resulting in drainage. Usually, resolution and absorption occur, and the case recovers—there being no infection. Thus the acute catarrhal cases end in ten to fourteen days. When the

osteum maxillare becomes closed from violent infection it, as a rule, remains permanent, and if gas arises it not infrequently causes pressure, or a sense of fullness under the eye, which causes the most intense suffering. These particular cases exhibit a bad odor both in the patient's breath from toxic absorption, and a terrible stench on evacuation of the cavity through surgical means.

The objective symptoms are often absent, but are valuable when present, as redness and swelling of the skin of the cheek, changes in the fundus of the eye, etc. Congestion of the eye is very frequent, as there is a very free anastomosis of the veins of the sinus with the opthalmic vein. If the case is a low grade chronic suppuration with the osteum maxillare still open, a discharge from that side of the nose of muco-pus, or pus, is seen. This, however, is more likely pus from some neighboring cavity, as not infrequently all five of the cavities in the same chamber are diseased simultaneously.

Tenderness on pressure on the cheek, lower margin of the orbit, and canine fossa, are valuable signs. Trans-illumination when possitive, is a valuable indication of an empty sinus. If, however, there is opacity over the lower lid, a non-luminous pupil, and absence of sense of light when eyes are closed, disease is indicated.

When the mucous membrane of the middle turbinate is boggy, having the sense of touch to the probe similar to the normal inferior turbinate; or, when polypi are in the nose there is strong presumptive evidence of accessory sinus involvment. Nasal polypi are nearly always preceded by ethmoidal suppuration, which may or may not have subsided before the polypoid growth has attained any considerable size. We are absolutely safe in saying that in every case where pus flows from the nose for a period in excess of four weeks there is purulent inflammation of one or more accessory sinuses.

The subjective symptoms of sinus inflammation have reference to the sensations of pain and of pressure, the equilibrium of the mind, and the impairment of the special senses. Pain referable to the region of the antrum may or may not be present. Headache, more or less unilateral, increased on stooping, is as bad or worse in the dark, but is not made worse on going to the theatre or moving-picture show, or on prolonged reading, as is the case from eye-strain. There is pain on pressure over the canine fossa. Giddiness and vertigo or a momentary sense of blurred or darkened vision and imminent fainting are frequently present in disease of the sinus. When this symptom is present especially upon the patient's stooping, the dagnosis is pretty sure. The olfactory and visual senses may be, and frequently are, impaired; they may be lost altogether. The sense of smell may be perverted (parosmia) *i. e.*, smelling abnormal odors. A more common symptom is loss of the sense (anosmia): both are due when present, to pressure of the middle turbinates, usually in bilateral sinusitis, on the septum, thus interfering with the ventilation of that part of the nasal mucosa containing the smelling terminals of the olfactory nerve. Ocular disturbance may be due to either arterial or venous congestion, toxins or venous thrombosis; indeed, almost any disease of the eye may ensue, the more serious being retinitis and iridocyclitis. Finally the eye may be lost by reflex vicarious disturbance, as exhibited in a case, which I reported to the Medical Society of Virginia two years ago.

The *principles of treatment* are two, only: (1) The establishment of drainage and ventilation; (2) The removal of the morbid material.

In those cases, notably non-necrotic in nature, in which interference with drainage and ventilation is due to a simple hyperemia of the mucous membrane, restricting the osteum maxillare, the local application of such agents as cocaine, antipyrine, or adrenalin may be quite sufficient to establish a cure. In such cases the morbid material is the secretion, and drainage removes it. It is removed in such cases where the ciliare are alive, whenever the osteum is patent. On the other hand, in those cases in which there is marked obstruction due to a deviation of the septum, or to hyperplasia of the middle turbinal, it is often necessary to resort to surgical measures to obtain relief. Furthermore, in those case in which the sinus is filled with granulation tissue, and the bony walls are necrosed, the establishment of drainage, even by surgical means, may not effect a cure; the morbid material (granulations and necrotic bone) must also be removed. An appreciation of these fundamental principles enables the

surgeon to decide upon the method of treatment in each case.

In acute cases, the removal of the anterior end of the middle turbinate bone so that pressure is removed from the osteum is a valuable procedure, *in addition* to local depletants just mentioned. Also give the patient such agents as menthol, and camphor, and carbolic acid, of each five grains; and soluble iodine, ten minims to the ounce of albolene, or other bland oil. This to be applied by the patient in the form of an oil spray, or by direct application, every two hours. In addition to this a brisk free mercurial purge is indicated. No opiate should be given. Sulfonal to relieve pain is allowable. Chronic suppurative sinus disease, either with or without, granulations, polypi, or necrosed bony walls is only amenable to surgical treatment. No other treatment will establish drainage and ventilation, and remove the morbid material.

The extra-nasal operations generally employed are six in number: 1. The alveolar; 2. palatial; 3. Kuster's; 4. the Caldwell-Luc; 5. Denker's, and 6. Jansen's. Four of these have been done by me personally, and these four, embracing all the principles of the extra-nasal route, I am safe in feeling that I do not err when I discard all for that most rational and easy route, the intra-nasal. The principle in this method is to remove a portion of the naso-antral wall as far forward as possible, and on a level with the floor of the antrum and floor of the nose, thus establishing perfect drainage. This opening should be three-eighths inch in its vertical diameter by a half to three quarters inch in its antero-posterior. Thus the other principles of treatment, i. *e.,* good ventilation and the removal of the morbid material, are facilitated.

Of *the intra-nasal operations,* Vail removes a circular piece by means of a saw, curved and beveled. Ballenger uses a swivel knife, removing a quadrilateral piece as above described. Miles and Corwin use chisels. Ostrum uses forward cutting mash forceps.

The following is an intra-nasal operation, which I claim is the easiest to do, destroys less turbinate tissue, is the easiest to dress or cleanse, and is generally the most satisfactory. The technique is as follows: The nasal cavity is first thoroughly cleansed, by means of spraying; the patient then blows his nose, and afterwards swabbing the nose with a cotton-wound probe. A ten per cent. solution of cocain is applied to the middle meatus by means of the cotton-wound probe; pledgets of cotton soaked in the same solution and wrung dry are applied to the anterior end and underneath the inferior turbinate bone. After fifteen minutes, finding anesthesia complete in the region, I swab adrenalin chloride solution, one to 1,000 over the entire field. By means of turbinate scissors, the anterior end of the inferior turbinate is severed close to its attachment for a distance of three-eighths inch, hugging close its attachment, upward and backward about at an angle of forty-five degrees; then with a snare, threaded with a fine steel wire, first put in this notch made by the scissors, and pushed backward for three-eighths inch, a triangular piece three-eighths inch in size, apex upward is removed. With a blunt elevator the anterior end of the turbinate is raised, it being lifted as high as possible without fracture. A curved trocar and canula are pushed through the naso-antral wall down on the floor as far forward as possible; the antrum may be washed out if desired, before proceding further; this, however, is optional. The trocar removed, a side-cutting bone forceps is introduced, and a quadrilateral opening is made three eighths inch high, or in the vertical dimension, and three-quarters inch in the antero-posterior dimension —following well down to the floor of the nose and floor of the antrum all the way. The little finger is now introduced, and the antrum thoroughly explored. A flexible slender ringed sharp curette is used if it is indicated. By means of a smaller vertical cutting forceps any ragged edges to the lining of the opening are removed. The cavity is syringed gently with hot saline solution, dried with gauze sponges and packed moderately tight with a wick of iodoform gauze.

If there is no considerable discomfort or the temperature does not go higher than 99 1-2 degrees F., the dressing is allowed to remain for three days. It is never repacked. The cavity is then syringed daily with saturated solution of boric acid, or some mild antiseptic solution for three days. The patient is now given a simple soft rubber syringe—the cheap ear and ulcer syringe is a good instrument—and told

to syringe the cavity every other day for the first week, then every third day for the next week, using a warm solution. After this one syringing a week will usually answer as long as the discharge continues; which is rarely more than six weeks after operation. No powder of any kind is blown into the cavity. This is contra-indicated, as I have always found it to act as a foreign body, thereby prolonging the discharge. I find that with the judicious use, and I would say further, a liberal use of cocain, patients very rarely complain of much pain; indeed, many say there is practically no pain experienced.

To further state the good points in this operation, I beg leave to say:

1. The whole of the body of the inferior turbinate is left intact—a valuable part of the anatomy. This body has more to do with the greatest function of the nose than any other structure, *i. e.*, the warming and moistening of the inspired air, thus fitting it for reception by the lungs.

2. The absolutely perfect drainage afforded the antral cavity, and thereby facilitating its washing by the patient in his own home.

3. The perfect ventilation, inspired pure air —nature's antiseptic—can perpetually get in its good work, and prove a vis medicatrix naturæ.

4. The almost perfect protection afforded the opening of the antrum, acting as a shield hanging from above and backward, preventing the entrance of secretion when the nose is blown.

5. The access to all parts of the antrum by the finger and curette, thus preventing the wounding of the infra-orbital nerve—a no small blunder when, by accident, this is done.

118 *Thirty-second Street.*

SOME OF THE DIFFICULTIES IN THE APPLICATION OF EUGENICS TO THE HUMAN RACE.

By G. FRANK LYDSTON, M. D., Chicago, Ill.
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The idea that certain principles of scientific breeding should be applied to the propagation of the human race has suggested itself to most students of sociology. The extent to which it may be applied is differently viewed by different students of the subject. I have been accused of being radical, but, judging from the published opinions of other workers in sociologic fields I believe that I can lay claim to graeat conservatism.

Considerable capital has been made by the press of this country of the recent remarks of Professor Davenport, of Illinois University, who has been put in the light of an ultra-radical, when, as a matter of fact, he is soundly conservative. He confesses at the outset that his knowledge and theories are limited entirely to observations in plant culture and domestic animal breeding. The views of Professor Davenport and of many others have been so garbled, and so many illogical treatises and speeches have been made upon the subject of eugenics that its conservative discussion would seem timely.

The widest difference between the scientific breeding of animals and breeding of human beings is a matter of psychology. Domestic animals have no choice in the matter of being bred—man does their thinking for them—much to the detriment of the helpless animals in most instances, for the finest and most uniform normal types are found under primitive, i. e., wild conditions.

This will be disputed, of course, but if the animal with man-cultivated qualities is returned to his primitive environment, he is not likely to offset its vicissitudes. He is unfit under the same conditions in which his wild ancestors are perfectly fit.

The qualities which man considers "superior" in domestic animals are, in general, superior only as regards the needs of man, and from the standpoint of the animal's own best interest are abnormal. The two hundred egg hen is abnormal, and, under natural conditions, her enormous egg yield would be a biologic waste and an impediment to species perfection. The super-abundant weight of fat cattle and hogs would be disastrous to their species if man, for his own selfish ends, did not help them to fight life's battle thus perpetuating the abnormal type.

Domestic animals have no social, sentimental or emotional interests nor ambitions to consider in the matter of breeding. The opposite prevails with man.

It is true that the psychology of animals should not be altogether neglected in scientific breeding for certain purposes, but its range is

very limited. We can dispense with trained dogs and abnormally intelligent horses, but we must have two hundred egg hens, ton and a half cattle and butter-fat hogs.

If there is a "divine" right of socially fit human beings, it is that of discriminating sexual selection. The discrimination is usually a matter of emotion and sentiment rather than good sense, but, all the same, 'tis our inalienable right, and woe betide the man or State which shall endeavor to abrogate it! Legislation by direct and radical interference will be impossible so long as the human heart throb dominates the human brain cell. Education of the public will do something; proper physical, mental and moral training, particularly of children, will do more. It will be time enough to talk of the arbitrary legal application of the more minute principles of eugenics when degenerates—criminal, epileptic, insane and drunken—are prevented from marrying, and all children are reared under the supervision of the State, made healthy, well nourished and clean, and given proper mental training.

What shall be the standard of the normal? Shall it be physical or intellectual? Man has paid a high price for his exalted degree of intellectual development. It has never been well balanced with his physical. A sound mind in a sound body is good theory, I grant you, but a phenomenal body is a *rara avis*. The genius is not always long lived; he is often a degenerate, and, from the physical—and sometimes from the moral—standpoint, is as much a cull as many criminals. Shall we put him out of the way or segregate him? He might strike work, and that would not pay. We must discount, not his worth, but his defects, save where the latter are so pronounced that we are asked to pay too high a price for his genius.

Supposing we take mental accomplishments for our standard and breed genius to genius, what will happen? We are likely to produce, if anything, imbeciles, or at least, worse than mediocrities. I say "anything" advisedly, for the geniuses of the world have not been prolific. Even when wed to healthy mediocrity their progeny have usually been limited and by no means a credit to the one-sided parental genius.

Shall we take the phenomenal physical man as our standard? What shall it be, the dwarf or the giant? The dwarf may have a phenomenal mind and the giant the brain of a child. Chatterton, the brilliant Chatterton, was a weakling, called back to the bosom of nature before his time; Byron had a club foot; Lafcadio Hearn was a hunchback, and Poe a drunkard! Sandow has built no enduring monument, and John L. Sullivan's fame as a "pug" rather overshadows his histrionic reputation.

Shall the standard be a moral one? If so, then will both brains and muscle perish from off the earth? The genius of Stanford White built for him architectural creations that will stand long after his moral lapses have been forgotten. None of our geniuses have ever been in danger of canonization as saints, and if the truth were known, the halos of some of our saints were undeserved. The morals of our great atheletes have not always been implacable.

Again, I say, some of the physically unfit are of great value to the world, and, if bred with proper "corrective" blood, may possibly reproduce their betters in physique and their kind in value.

Many a short-lived genius has accomplished wonders. So many geniuses have been physically or morally degenerate that it is rather easy to estimate the price the world must pay for its geniuses and also the price the genius must himself pay for his genius. Genius is largely a loss of physical and psychic balance. Breed genius to genius and, as I have already intimated, where the union is not sterile, the progeny are likely to be few, short-lived and degenerate. Not only do physical perfection and over-topping genius rarely go together, but oftentimes the genius is a biologic "sport." Breed him so as to perfect the physical man and we risk the loss of genius in his progeny. All these things which raise man to the heights in the scale of intelligence tend in general to lower him from the standpoint of physical animality.

Preponderance of brain is expensive to humanity—which explains why social systems begin dying at the top. It is in our great centers of refinement of all those attributes and accomplishments of which civilized man is wont to boast, that crime and immortality most flourish. A social system which approximates the dead level of mediocrity should, other things being equal, be ideally moral. Vice most flour-

ishes in the degenerate scum and in the degenerate dregs.

Galton's famous tables bearing on the height of English people are quoted by Dr. Davenport as illustrating the value of eugenics in the human race. I submit that, within wide limits, the height of the individual is no criterion of the normal. Large stature is not always a favorable human variation. The tables of life insurance companies show that they are justified in being rather pessimistic regarding the longevity of the large men. Size is governed largely by racial tendencies and environment. It is said that the Japanese will increase in stature when they become a race of meat eaters. Can any race of meat eaters now excel them as fighters? Fighting is the supreme test of physical man. This race of little brown men has progressed faster in fifty years than any large race that can be mentioned has in several centuries. And can any fault be found with their intelligence? I have little sympathy with Galton's tabulated idea of the "taller" being the "better" offspring and the "shorter" the "worse."'

One of the most advantageous points in animal breeding, so far as perpetuating a uniform and superior type is concerned, is in-breeding and line-breeding. This is especially true of fowls. What is the record of consanguinity in human breeding? Bad, undeniably bad. The difference probably lies in the fact that careful selection can be made with animals and they are bred under far more natural and wholesome conditions than are human beings, on the average, notwithstanding the fact that the native state of animals is widely departed from under domestication. The advantage of primitive conditions is shown by the fact that animals breed regardless of consanguinity in their native wilds, where the law of survival of the fittest is supreme. Here the "culls" do not survive the struggle for existence.

Human beings, on the other hand, do the best they can to protect and rear the culls. Incubators for unfit babies and medical and surgical treatment are often irrational enough from the standpoint of eugenics. The sentimental salvation of the unfit is disastrous to the race.

To my mind, it is quite clear that uniform and arbitrary breeding for genius on the one hand or for physical perfection on the other would be disastrous to the human race. Highly developed brains must do the thinking for the race and powerful muscles the drudgery.

Do I then believe that nothing can be done to improve the race? Far from it. As I have already stated, much can be done by education and something by common sense marriage, legislation and State parental methods.

Dr. Davenport does not much believe in the practicality or the advisability of marriage laws in human breeding control. Here we differ. A great deal can be done and should be done. If we do not begin at the altar, where and how shall we begin? Dr. Davenport would prevent the inter-breeding or cross-breeding of his culls. I would prevent their procreation. Which is the more logical?

First, consumptives, epileptics, insane, incurable inebriates, and criminals should at least not be allowed to marry unless they consent to steriliztion. This would prevent many social ills and often prevent the crime of permitting a degenerate child to be born. Sterilization is the only sop that should here be thrown to the Cerberus of sentiment.

Second, the State should stand *in loco parentis* to the children of the poor and to orphans. It should see that all children are phsically as well as mentally and morally trained. I would make every school a military school and gymnasium in modified form. Manual training of children should replace some of our educational fads and fancies. Brain is developed through muscle building and manual training as well as through the special senses. Educators, please note.

Third, all criminals and insane, epileptics, diseased prostitutes and confirmed inebriates should be regarded as culls until they have established their right to be considered "cured" and worthy of replacement as social integers. If incurable, they are social excreta, and should be placed beyond the possibility of contaminating the body social.

Fourth, marriage should be recognized as the cornerstone of society, and those who contemplate it should be proved to be physically and morally fit. Society has the same right as an insurance company to protect itself against loss.

What do I mean by loss? The expense of our hospitals, asylums for the insane, prisons,

work-houses and ponderous legal machinery. He who does not believe that society should be protected against its degenerate and diseased integers would better ask his family physician what he thinks about it. Ask him how much surgery, blindness and other forms of misery revolve around loathsome diseases transmitted by uncured benedicts.

Fifth, Dr. Davenport has been quoted as advocating segregation of "culls." In substance this is what the modern school of criminologists and penologists has been for some years advocating. I will go further than most and state that in my opinion some culls should be even more radically dealt with. When an individual has proved dangerous and destructive to society, he has lost his right to remain a member of it and should be removed from it. The parole system is a step in the right direction. Full opportunity should at first be given him to re-establish his right to freedom and membership in society. Should he prove incorrigible, he should, in extreme cases, be removed by killing him.

Especially should this be done in the case of criminal murderers. Here I do not mean the murderer by impulse of passion, for he is antropologically not necessarily a criminal. I refer to the typic criminal who kills in pursuit of his vocation; e. g., the hold-up man or burglar who kills his victim. The term criminal murderer also should include the man or woman who from various motives, such as revenge, jealousy or money or property lust, commits murder.

When a criminal is killed by society, it should not be done in a spirit of revenge or for "punishment," but simply as a measure of social defense. The social cancer should be removed by the social surgeon—the executioner —quietly, humanely and unexpectedly.

A hermetically sealed sleeping apartment with a secret pipe for the admission of deadly gas, would be my suggestion. Let the "removal" come in the still watches of the night so that death may be but the continuance of sleep.

When the lesser lights among criminals and other social excrescences have been shown by repeated trials to be beyond the hope of cure, let them be immured within prison walls for life. And, moreover, let them be compelled to do such labor as shall make them self-supporting.

The present system of taxing normal decent people for the support of degenerates is not only morally wrong, but an economic farce.

If criminals were compelled, not only to serve a term of imprisonment for their misdeeds, but also to reimburse society for their depredations and the cost of arrest and conviction, crime would be normally reduced. The incendiary who was compelled to work out the loss to the owner of the building or the insurance company and the cost of the legal machinery which convicted him, in addition to the usual penalty for arson, would not be likely soon to build another bonfire. This might be a specific for pyromania. And so, all along the line.

The world is not yet ready for the radical treatment of helpless inebriety, insanity, epilepsy and imbecility by "removal" at the hands of the "social surgeon," but, all the same, the world is paying a high price for its maudlin sentiment. When a murderer ascends the scaffold and receives his doom, the world looks on approvingly. A driveling imbecile, too obtuse to attend to nature's calls, sits all day on a commode in a hospital ward, covered black with loathsome flies, which the poor creature is too sluggish to notice and too helpless to brush away, and the world holds up its hypocritical hands and snivels in maudlin horror at him who fain would pass the chloroform. And yet, the friends and relatives of that poor imbecile have wished him dead a thousand times a day from the moment of his birth.

Oh, man's inhumanity to man! "What fools ye mortals be!"

I have been accused of pessimism by reviewers of my book, "The Diseases of Society." The study and elucidation of social pathology is not pessimism. I have merely made a social dissection and reported my findings as they appeared to me.

In a postscript, Dr. Davenport says: "I cannot approve of the oft-proposed interference with the marriage relations of normal people." No one of logical mind has ever proposed any such interference. But, what is to be the standard of the "normal?" Dr. Davenport stands self-confessed as non-expert in this particular field.

There is a question in my mind as to whether extreme poverty is a "normal" social condition. I sometimes wonder if it is just to allow certain persons to breed children who must become prostitutes, criminals or paupers, and, of necessity, social evils. We have a financial test of desirability for immigrants. Why not for candidates for matrimony, the potential parentage of citizens of the Commonwealth? Should not the prospective children also be protected?

Not to be born is by no means always a misfortune. Being born is sometimes a calamity.

And now methinks I hear the sentimental bees buzzing around mine own devoted head. Well, at any rate, if the poverty-stricken must be allowed to marry, the State should assume a parental relation to the children. This would be the cheapest way out of the resulting difficulties of society.

Paupers, tramps, hoboes, criminals, drunkards, idiots, insane and prostitutes come higher than our children's education. Statistics show that the per capita social tax for the degenerates is larger than the per capita spent for education.

Professor Davenport is quoted as saying: "Let Mr. Jones be taken into court and his ancestry record be investigated. If we find his parents were dominantly bad it means that he is fifty per cent. bad. If his grandparents were also bad he is twenty-five per cent. bad, and so on. When he gets to ninety per cent. bad, it is certain he must be colonized. I feel sure that this is entirely practical, and hope it will soon be made a fact. There is a strict mathematical law that runs through it all."

This will never do. Supposing the offense for which Mr. Jones is taken into court is a nominal one. Further, that his normal record gives the lie to his ancestry. Must he perforce be condemned by mathematics? Shall the man of evil heredity not be permitted to live it down? How do we know that he has inherited evil tendencies until he has made a record which proves it?

Does a bad ancestry necessarily imply an inheritance of an arbitrary percentage of things evil? I don't believe that Professor Davenport was correctly quoted, but, if he was, it is unnecessary to further state my opinion of his views.

A CASE OF ABDOMINAL GUN-SHOT WOUND WITH INTESTINAL PERFORATIONS, WITH SPECIAL REFERENCE TO THE AFTER-TREATMENT WITH "SALINE DRIP."*

By THEODORE MADDOX, M. D. Union, S. C.

The following case is presented because the results of the after-treatment were so satisfactory, restoring seemingly a hopeless case.

Abdominal gun-shot wounds with intestinal perforations occasion much suffering and cause many deaths. It is, therefore, of sufficient importance to warrant a word of commendation regarding anything which we may consider conducive to recovery.

It was my intention to review this subject, but on second thought I concluded merely to present the case and briefly make a few suggestions, especially on the after treatment, to those who may see this report.

The treatment must be prompt less the patient become exsanguinated. The surgeon should go equipped for any and all abdominal work, as I shall demonstrate to you in my report of a case that the range of a bullet after penetrating the abdominal cavity is unknown in many instances.

In cases with intestinal perforation with blood and fecal matter poured into the cavity, thereby carrying the infectious material over its entire surface, we know that irrigation will remove only the non-adherent particles. Sponging will remove much of this adherent matter, but is very irritating to the viscera, and we should be very cautious or a more violent inflammatory condition will ensue, thereby adding additional danger to the patient.

It has been demonstrated that irrigation, sponging and ordinary drainage is insufficient in this class of patients, as the peritoneum absorbs the infectious material too rapidly. The object then must be to make an excreting instead of an absorbing membrane. For this purpose, I think the "saline drip" is superior to all other methods, and the technique is so simple that the novice may operate it with the greatest ease. An ordinary fountain syringe with a rectal tube, or large catheter is all that is necessary. The syringe should be elevated only about two feet above the level of the patient, and the clamp should be so arranged that

*Read before the Tri-State Medical Association of Virginia and the Carolinas, at Charleston, S. C., February, 1909.

only one drop of a normal saline solution should drip into the bowel about every second. Should this quantity prove to be more or less than is required, the clamp on the tube can be regulated accordingly. The solution should be kept warm, if possible, as this will materially aid absorption from the bowel.

I make no claim of originality in the treatment herein described; it has been absorbed doubtless from the teachings of others, but from whom, or at what time I cannot say.

Russell P., age three years. On December 23, 1908, he received an accidental gun-shot wound with a .22 calibre parlor rifle. The bullet penetrated the abdominal wall about two and a half inches below the umbilicus, and one inch to the left of median line. It ranged backward and slightly upward, making nine punctures in the ileum. The first section of intestine brought into view contained three punctures, two of which were separated by about a quarter of an inch of tissue, while the third was some two inches from the first two. These were held by an assistant, and the search continued. About twenty inches from the first three, four other punctures were found, ranging from three-fourths to three inches apart. These were in like manner held by the assistant, and the search continued. About twelve inches distant, two additional punctures were discovered, one of which was at the mesentery border of the intestine. The search was continued for several feet, but as nothing was found I decided to repair the damage already discovered, which was done with a Czerny-Lembert suture, a resection of intestine not being considered advisable. After all the punctures had been repaired, I inspected all the abdominal viscera that could possibly have been within range of the bullet, which included both large and small intestines, left kidney, ureter, bladder and anterior surface of posterior abdominal wall.

It was found that the ball penetrated the iliacus muscle about an inch below the crest of the ilium, and about the same distance from the sacrum. It did not penetrate the bone, but instead had been deflected; so quite naturally I expected to find it imbedded under the iliacus, or psoas muscles. A careful examination failed to locate it, or even find a passage leading off from the wound in any direction. It is possible that the ilio-lumbar, or lumbo-sacral ligaments may have closed the passage so thoroughly that it could not be found with the probe; or the bullet could have rebounded and removed with a blood clot, there being no less than a quart of these in the cavity; or it might have jammed the intestine against the ilium in such manner that it rebounded, and was left within the lumen of the gut; or it may have been flattened and imbedded to such an extent that it was impossible to outline it. The blood clots were examined, but I think some had been removed before the examination was made. The stools were examined for several days, but failure to recover it was likewise met with.

Owing to the great loss of blood, which made the prognosis extremely unfavorable; and feeling that to continue the search would only jeopardize the life of the patient without accomplishing the desired result, the abdominal cavity was closed. A large iodoform gauze drain was placed well down in the pelvis in order that I would be sure of getting the pus.

On the second day, the patient developed peritonitis vomit; and inasmuch as there was great abdominal distension, it looked as if death was inevitable, but this gradually subsided, and on the fourth and fifth days he was only occasionally nauseated.

After forty-eight hours the drain was removed and the incision, intestines and peritoneum were in an unusually healthy condition and free from pus. The appearance of the viscera indicated that drainage through the bowel had been very decided, inasmuch as there was not a trace of odor other than from the iodoform, which latter was very faint. A light iodoform gauze tampon was placed in the wound down to the peritoneum, and dressing reapplied. In forty-eight hours this was removed without pus, wound still having a good healthy appearance. A light iodoform gauze tampon was again placed in the wound, but not quite so deep as before, and dressing reapplied. Owing to rectal irritation and healthy condition of wound, and lessening of abdominal distension, which latter had been very marked throughout, the saline drip was discontinued.

Owing to the fact that the patient was not doing quite so well on the fifth day, the wound was again dressed and "saline drip" resumed. At this time the wound was not quite so

healthy; still it was thought advisable to close one of the two remaining sutures, thereby reducing the ventral drainage by about half. The saline drip was continued for about thirty-six hours, at which time the wound was again dressed. At this time the tissues were much improved, and the wound was closed with the remaining suture and ventral drainage discontinued.

On account of rectal irritation the saline drip was discontinued on the following day, but several small enemata, after the Murphy method, were used daily for forty-eight hours, after which time they were discontinued.

Recovery was uneventful after the tenth day, and to-day the patient is enjoying the same degree of good health as before the accident.

In considering this case I am impressed with the following facts, well worth emphasizing:

First. In using the "saline drip" you create an excreting instead of an absorbing peritoneum.

Second. In permitting the saline solution to drip high into the bowel, it can be so regulated that absorption is decidedly favored, and regurgitation far less liable to occur.

Third. At twenty-four-hour intervals the patient would have two or three copious evacuations from the bowel, after which he was each time much improved.

Fourth. Several times patient's entire body was covered with sodium chloride crystals, which demonstrated that absorption from the bowel was very decided.

Fifth. Most of these cases, as in this one, are exsanguinated from internal hemorrhage, and the saline solution replenishes the blood stream in addition to draining the peritoneal cavity.

Sixth. It is my opinion that the abdominal cavity could be closed a great deal earlier than was done in this case. In fact, I think that it could have been closed immediately, although I would hesitate to be the first to do so.

Book Notices.

Anterio-Sclerosis—Etiology, Pathology, Diagnosis, Prognosis, Prophylaxis and Treatment. By LOUIS M. WARFIELD, A. B., M. D., Instructor in Medicine, Washington University, Medical Department, St. Louis, etc. With an introduction by W. S. THAYER, M. D., Professor of Clinical Medicine, Johns Hopkins University. Eight original illustrations. C. V. Mosby, Medical Book Co., St. Louis, Mo. 1908. 12mo. 172 pages. $2.

In this age of most strenuous living, scarcely any subject in medicine needs a more careful study than this of arterio-sclerosis—especially since after becoming an established condition, the constant dangers to the patient are so great and attempts at curative treatment so generally futile. It is in the recognition of its causes—whether from dissipation in drink or at the table, or in overwork, etc—that the duty of the physician is plain in each family, teaching the laws of moderation in all things. We would be glad if every practitioner of medicine read this book, and even induced the more intelligent layman to do the same. It is a most useful book—dealing practically with the etiology, pathology, diagnosis, prognosis and *prophylaxis* of the condition.

Editorial.

Repeal State License Taxes on Doctors.

This is a live issue in Virginia that cannot be "downed" until its final success. Committees of the Medical Society of Virginia and of the Virginia Homeopathic Medical Society are in the field. District and local medical Societies all over the State are likewise at work; and we trust that combined influences will this year be sufficient to lift the Virginia medical profession from the position it has so long been made to endure to the level of the profession in other States and in Europe. In addition to the above influences, the Virginia State Board of Health, as also the various local Health Boards throughout the State, will lend their cordial help.

There is a strange sentiment on the part of a certain few doctors who seem reluctant in giving their earnest help to the cause—claiming it to be "undignified" for the profession to again petition the Legislature on the subject. These few doctors present neither facts nor arguments to sustain their inactivity, and yet, no doubt, will be glad to learn, as the result of work by others, that the hoped for success is achieved. If the measure is desirable and right in principle, surely it would be more becoming in those now perched on their dignity

to come down and lend earnest, willing help.

There are some to whom the Repeal Bill may not appeal because of their own sufficient means. But by the vast majority of doctors this State license tax is felt as an annual oppression, and is paid "grudgingly and of necessity." However, most of this better-to-do class of Virginia practitioners have cheerfully and liberally contributed to funds needed by the Committees to organize, lay out plans for legitimate campaigns of education of prospective legislators, etc.

The principles of right and equity involved in the measure advocated have long since been decided favorably to the profession, both in Europe and in nearly every other State of this Union; and the time must be at hand when proper information on the part of Virginia legislators will lead them to give speedy relief.

However much might be said with reference to the peculiarly enforced charity work of doctors, it is not on the ground of such gratuitous services to the poor and needy that they ask for release from State license taxes. It is the devotion of their energies to the study of the causes and prevention of diseases that gives them special claim on the favorable consideration of law makers. They seek, first in one household and then in another, not only to cure diseases they are called on to treat, but to teach families how to prevent recurrences. Their efforts are all the time in the direction of making it "distressingly healthy" as to themselves; for, as they lessen the frequency of the causes of disease among their patrons and the public generally, they lessen the frequency of occasion to be called in as attending physicians or surgeons.

Reputable doctors place no patent rights on their discoveries as to prevention or cure of diseases; nor on the valuable lessons evolved as the result of their diligent research, or mature experiences and observations. The details and the results of their beneficial investigations are freely *given* to the public. They are constantly inculcating the laws of *preventive* medicine. If there had been no other gift to the world than that of the value of vaccination, that alone would have been a benefaction sufficient to commend the profession to special consideration. That devastating scourge of other years—cholera infantum—has become relatively infrequent as the result of persistence on the part of doctors in teaching the means of its prevention. Epidemics of yellow fever are scarcely longer to be feared, if people will only heed the teaching of their physicians. Diphtheria—formerly the dread of families and communities—has become largely preventable, and a comparatively innocent infection if recognized in time. Malarial diseases of all kinds are becoming more and more troubles of the past. All of such things are due to the studies and investigations of doctors, freely contributed to the cause of humanity. To make practical the lessons thus learned, they have urged and are constantly urging the establishment of boards of health with ample authority to act. If such things as above referred to are already accomplished, and with studies directed to the discovery of means of preventing or curing other diseases, what possible justice is there in imposing a *license* tax on those seeking to learn how to prevent and cure infections and the like? How can such services of the reputable doctor be estimated in monetary values?

But, it is said, the doctor charges for his professional services. Who would deny to the laborer the value of his daily hire, or the teacher his pay, or the preacher his salary? Who think of imposing a license tax upon the farmer, or the editor of a journal, or on the Governor or officials of the State, city or county? Many other callings or businesses are exempt from *license* taxes, simply because of their special values to the public, and among the first of these should be placed the medical profession. Of what possible service to the public could boards of health be—local, State or national—unless they have the cordial help and co-operation of practitioners of medicine?

In recognition of their high mission, doctors are now demanding better ground work preparation of those proposing to study medicine. They have seen enough of the dangers to the public of unqualified and uneducated doctors to make this demand. Years ago, it was possible for one to secure his medical degree after only a session or two of college matriculation. Now, however, before beginning a medical course, the student must show evidence of academic education equivalent to that of a full four-year graded high school course. Then he has to pass

through at least four years of medical college tuition before he can offer for graduation. After graduation at any of the reputable medical colleges or universities, he must then stand a satisfactory examination as to qualifications before the Board of Medical Examiners of the State in which he proposes to locate. The public did not demand such things, but doctors themselves did so, for the safety of the people. Even in such matters the profession is constantly struggling to promote the interests of the public.

It is all right to tax certain businesses, or properties or incomes beyond some specified amount—whether of doctors' or not, but it is plainly wrong to impose *special license* taxes on those who practice legitimate medicine. Of course, quacks and charlatans and imposters and the like cannot be classed as reputable scientific doctors.

Collargolum and the Council on Pharmacy.

The Council on Pharmacy, of the American Medical Association, has undoubtedly done good work in analyzing and exposing the composition of a number of nostrums, proprietary preparations, etc. But it is unfortunate that at times it loses its influence with the profession by assertions that are not sufficiently well founded, and that are not in accord with common experience and observation of doctors. Practitioners are specially desirous to secure *results* in the administration of drugs, and are by no means always prepared to state their physiological action, and, indeed, many are not noticeably interested in the study of the *modus operandi*—provided the therapeutic agents accomplish what they wish.

In some recent criticisms by the Council on Pharmacy of the American Medical Association concerning the colloidal preparation of silver, known as "collargolum," we are reminded of the old discussion of the Bennett School of practice, as to whether or not "calomel acts on the liver," and which for awhile very much lessened the use of this almost invaluable preparation, until finally the more earnest practitioners succeeded in establishing the doctrine that whether or not it "acts on the liver," it nevertheless brings about results that are wanted, and that are again attributable to its stimulating properties on the hepatic functions.

It seems that when investigations were about to be begun by the Council concerning "collargolum," the American agents, Messrs. Schering & Glatz, of New York, requested that, in advance of any publication on the subject, they might, by representative, be allowed to explain any misapprehensions or errors in the findings of the Committee. But the report of the Council was made in the *Journal American Medical Association,* March 13, 1909, without giving any reason for withholding the letter of Messrs. Schering & Glatz which has forced the latter to issue a pamphlet showing the many errors and false conclusions of the Council's Committee, as to the preparation itself, its therapeutic values, etc.

Such neglect of response to a perfectly fair and legitimate request seems almost inexcusable; for, in any court of justice, the defendant is entitled to the privilege of representation. Or else, their report shows the Council to be incompetent, or else prejudiced, or else willing to go to press without proper investigation of the collected material on the subject.

Our want of space forbids going into details, either as to the report of the Council on Pharmacy, published as stated above, or as to proofs given in the pamphlet issued by Messrs. Schering & Glatz, of New York, copies of which will, no doubt, be cheerfully sent to any doctor on request for the same.

"Collargolum" is an agent of too invaluable utility in practice to be laid aside by the "ipse dixit" of the Council on Pharmacy—especially when their report is shown, by the pamphlet referred to, to contain many errors. As the pamphlet affirms, "in very grave cases of sepsis and of septic infection, a striking remission of fever and a prompt improvement in the general condition often occur," when sufficient amounts are given by enemata. In fact, "the therapeutic effect is nearly as vigorous as that of intravenous injections of collargol." A number of favorable clinical reports of its value is given by some of the ablest of practitioners in this and foreign countries.

Experiences of this Council on Pharmacy should have led it by this time to be more conservative in its enunciations, which otherwise might do harm to the popularization of well-tested and useful preparations.

The Surry County Medical Society

Held its regular quarterly session at Dendron, Va., April 1st. Dr. J. H. Parker, of Dendron, Va., read an interesting paper on "Empyema," which was quite generally discussed. Clinical cases were reported by several members present.

A contribution was voted by the Society, to be paid toward defraying the expenses of the Legislative Committee of the Medical Society of Virginia in its special work for the repeal of the State license taxes on doctors.

The following officers were elected for the ensuing year: President, Dr. W. W. Seward, Surry; Vice-Presidents, Drs. J. H. Parker, Dendron, and C. W. Astrop, Surry; Secretary, Dr. W. L. Devany, Dendron; Treasurer, Dr. J. W. Baird, Waverly, Va.

The Patrick Henry Medical Society

Will meet at Martinsville, Va., April 15th. The program will include papers by the following: Drs. R. S. Martin, Stuart, "Serum Therapy"; M. E. Hundley, Ridgeway, "Infectious Diseases"; R. R. Lee, Martinsville, "Gonorrhea"; J. R. Simmons, Martinsville, "Use of Obstetrical Forceps"; B. F. Tatum, Stuart, "Ileocolitis"; and C. H. Ross, Bassett, "Minor Surgery."

The officers of the Society are Drs. M. S. Martin, Stuart, President; and J. R. Perkins, Spencer, Secretary and Treasurer.

The Bedford County Medical Society

Held its regular meeting at Bedford City, Va., March 22d. Dr. Samuel Lile, of Lynchburg, was present, and read a paper on "Appendicitis."

The following recommendations were made for physicians on the County Board of Health: Drs. J. A. Davis, Bedford City; W. O. McCabe, Thaxton; and J. A. Pollard, Wades, Va.

This Society will meet again at Bedford City on June 28th. Dr. J. A. Rucker is Secretary.

South Piedmont Medical Society.

An attractive program is being arranged for the Semi-Annual meeting of this wide-awake, active Society, at South Boston, Virginia, on April 20, 1909. Prospects for a good meeting are excellent. Dr. H. B. Melvin, Houston, Virginia, is President,, and Dr. George A. Stover, South Boston, Secretary.

The American Therapeutic Society

Will hold its tenth annual meeting at New Haven, Conn., May 6-8, 1909. The sessions will be held in Lampson Hall of Yale University, and besides the lengthy scientific program, entertainments have been provided galore for visiting guests. Dr. Noble P. Barnes, of Washington, D. C., is Secretary.

New Surgical Hospital in Roanoke.

Drs. Sparrell S. Gale and J. Newton Lewis, of Roanoke, have purchased a valuable lot near the business center of the city, and it is their purpose to erect at once a modern surgical hospital.

Dr. Stuart McGuire, Richmond, Va.,

President of the Medical Society of Virginia, attended and read a paper by invitation before the Florida Medical Association during its session at Pensacola, April 7-9, 1909. He will spend a few days in Cuba before returning to his duties as surgeon at St. Luke's Hospital of this city.

Nomination of Councillors for Medical Society of Virginia.

Members of the Medical Society of Virginia residing in the First Congressional District during January, 1909, nominated Dr. Clarence Porter Jones of Newport News; and the Fourth District more recently nominated Dr. S. A. Hinton of Petersburg. Conventions of members residing in the Second District will be held at Norfolk. April 20; in the Third District, the meeting will be at Richmond, May 25th; in the Ninth District at Marion on the first day of meeting of the Southwest Virginia Medical Society during May; and in the Tenth District at Staunton, May 5th.

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SUPERSTITION AND GEM THERAPEUTICS OF THE ANCIENTS.*

By EDWIN LEE MORGAN, M. D., Washington, D. C.

The relation between superstition and religion, in the earliest ages, was intimately connected, being one and the same thing among the various races of mankind, who were collectively related and had, in common, many of the same traditions—sometimes, similarity in worship; and the same gods, under different names, with the same attributes, were worshipped in Europe, Asia and Africa.

Superstition can be said to be grandparent of religion; if not, it is certainly very near in kinship. In the course of evolution, from a lower to a higher sympathetic, and especially intellectual plane, our system was evolved by emotional and reasoning man, while faith and sentimentality are the acme of our present civilization and future destiny of all mankind.

M. Joly, in his work, *"Man Before Metals,"* page 350, says: "M. Carl Vogh states it is true, from the doubtful principle that all religion is the daughter of fear and ignorance, and consists in the adoration of the unknown—this unknown, that is God himself, being nothing but a superlative of which the positive is man," etc.

What is superstition but an innate form of religion—the love and fear of the marvelous, the incomprehensible, and the great unknown cause of causes? It is faith in his belief, which may be the opposite of common sense, and decidedly so to all processes of reasoning in his individual case. He may see the wrong and still the wrong pursue, along lines of faith and superstition, contrary to all scientific and historic facts.

*Read at a meeting of the Medical and Surgical Society of the District of Columbia, April 1st, 1909.

It is as much a natural characteristic of the human species to be both religious and *superstitious* as it is for the innate instinct of a duck, raised by a hen to take to the water, or for a hen to avoid going into a rill to swim.

We are to-day socially, as single individuals, in spite of our greatest intellects, permeated with this dread of evil, both directly and indirectly. The incomprehensible, naturally at an early date attracted the attention of our remote ancestors. The sable mantle of night only added to the terrors of the earliest savages, and the roars and howls of the then exceedingly large, prowling beasts, forced him to live in caves, etc., or else their voices to him were malevolently "man-beast," combining both the spirit of man and animal, seeking revenge because he, *as a friend* or foe, had neither *eaten,* or buried him, allowing animals to devour his remains, and thereby obtain his virtues, bravery, etc.

These savages believed in ghosts, warnings, etc., and the howling animals were ill omens, or the voices of exulting demons, who revel with delight at the fears of men, as they ride by in the howling blast, on the gloomy wings of night.

The immediate effect of storms, directly or indirectly, upon him, family, and friends, had a terrifying effect. Likewise the various phenomena of nature, occurring from time to time —such as earthquakes, eclipses, comets, shooting stars, bursting meteors, the aurora borealis, St. Elmo's fire, luminous fogs, hailstones on striking the ground sometimes emitting light, thunder and thunderbolts, haloes around the sun, and the moon, the rainbow, will-o'-the-wisp, the so-called "elf's candles," said to have been seen on the beds of the dying, phosphorescence of minerals, insects, flowers, bugs, wood or "fox-fire," gems, and of the sea at night, etc.,—were all viewed with awe.

Therefore, the sun, moon and stars, and the vast deep blue heavens overhead, engaged his earliest attention in wonder, admiration and terror. The sunrise, its rays and color, and the sunset, a varying play of colors to the rising of the moon—the silvery queen of the night—and the twinkling, sparkling diamonds over his head, appearing one by one—all of these he contemplated either in joy or in fear.

The animals, trees, vegetation, beautiful flowers, and their perfume, the flight and songs of birds, chirping crickets, noisy insects, hooting owls, and volcanoes all became objects of veneration and awe. The silent or active volcano, he viewed with apprehension either by experience or by traditions, handed down by his remote ancestors.

Nature, her various manifestations, and varied phenomena, were beyond his mental grasp. He had faith, not to be disputed. The love or the fear of the incomprehensible became an object of worship. He prayed to the unknown, wore talismans, used precious stones, etc., and had his particular fetish, whom he tried to propitiate by means of sacrifices. He believed diseases were due to magic, witchcraft, evil spirits, or the curse of the known God over head. He offered rare and costly gems, animal and human sacrifices to prevent disease and to be relieved of his particular malady.

Cannibalism is said by some to be a result of the advancement of races, in certain localities from a lower to a higher plane of advancing civilization, and embodies very often, both superstition and religion. The savage did not, as a rule, always eat human flesh from choice or necessity. They ate his heart, liver, etc., and drank his blood, because they believed in them resided his life, soul, courage and all his much desired attributes. The old Jews, are said to have believed the blood was the life, and Christ demonstrated at the "Last Supper," his nationality and racial characteristic when he said, "He who eats my flesh and drinks my blood lives in me and I in him." This shows life is in the blood, was so considered by the Jews, and, as I have shown, amongst primitive people of our era. Animal worship, perhaps, it is said, sprang from cannibalism, the beast devouring the man, etc.

Dreams, color, physical shape, and actual experiment caused man to use remedies, etc., in the treatment of disease. Color, also its symbolic meaning, and stone values played an important part in ancient medicine.

Again calling attention to the fact that there was and is, to some extent, in our own era, a relationship that exists between superstition and religion; there is also a connection between anthropophagy and ancient theology, as well as a decided relationship between ancient medicine and the oldest religions. Under religious supremacy, medicine was practically dead, making but little or no progress. The priest in past ages was a sanatarian, physician, and often the crude, barbarous surgeon, relying on prayers, relics, etc.

Andrew D. White says, "Still there is one cause for satisfaction. The law governing the relation of theology to disease is now well before the world, and it is seen in the fact that just in proportion as the world progressed from the sway of Hippocrates to that of ages of faith, so it progressed in the frequency and severity of great pestilences; and, on the other hand, just in proportion as the world has receded from that period when theology was all-pervading and all-controlling, plague after plague has disappeared, and those remaining have become less and less frequent and virulent."

There is no doubt but that color, which always appeals to the eye, has played an important part in earlier therapeutics, religion, and in the affairs of man. It had a psychic effect on mankind in general, and the sick in particular. Weymiss, in his "Clavis Symbolica," says: "Color which is outwardly seen on the habit of the body is symbolically used to denote the true state of the person or subject to which it is applied according to its nature."

Various tints or hues were used by the old Hebrews, ancient Egyptians, and other nations of antiquity, as well as in our era, by mystics, religious, and other bodies; such as, for instance, the Knights of Columbus, Pythias, Malta, Templars and other Masonic fraternities.

It is but natural that the members of our profession in past ages were impressed by that which appealed to the eye, uncomprehended, wrapped up with superstition, color, religion,

and that they attributed medicinal properties thereto.

White, among the Hebrews, signified purity, candor and nobility. The Spirits of the Egyption dead were clothed in white like the priests of Phtha. Blue is a symbol of friendship and benevolence, of air, "divine voice," truth, justice, light, fidelity, constancy, perfection, and emblematic of the heavens. Among the ancients "initiation and perfection were synonymous terms." Druid's blue was symbolic of truth. "The candidate in the initiation into the sacred rites of Druidism, was invested with a robe composed of three colors, white, blue and green."

Blue in Egypt was sacred—the body of Amun* being painted light blue, showing his heavenly exalted nature. Jeremiah says the Babylonians clothed their idols in blue. In Chinese mystical philosophy, blue represents a symbol of deity. Vishnu was represented by this celestial color, thus indicating, "that wisdom emanating from God was symbolized by this color." Medieval Christians sometimes considered this tint as an emblem of immortality, etc., according to Portal, on "Hope," etc.

Yelow, "among the Egyptians, as among the Hebrews, fire was the symbol of divine life, of human life, and of the life that animates all created beings." "The inward essence of divinity was ever considered by the Egyptians as male and female. The heat of the fire represented the universal male principle. Thought, says Hermes, is God, male and female; for it is light and life (Pimandre, Ctp. I, Sec. 9). It is evident that life in opposition to light, designates the ardor of the fire and the male principle, as light symbolizes the female principle.

Red in this case was symbolic of fire, and yellow that of light. The Egyptians in antiquity, painted man a cherry red, and woman a lemon yellow. According to some, yellow had two significations—marriage and faithfulness; and secondly, inconstancy, jealousy, deceit, etc. Among the ancients this hue signified divine light, or wisdom, in the same sense that red was emblematic of divine heat, or power, and it also represented gold and the sun.

Sozinskey, says this color in Christian symbology meant faith. The reason for its medical significance, he turns to astrology, because yellow was the color of the sun; and this orbit was regarded by the ancients to possess "the greatest influence over diseases"—for Apollo was god of medicine, etc.

"Thus the name of green designates the beginning of time, the creation of the world, the birth of everything that exists." "The god Phtha, founder of the world, the craetor and upholder," has green flesh. He "holds a sceptre in his hand surmounted by four cornices, which in hieroglyphic writing, is the symbol of co-ordination." "This sceptre is painted the four colors attributed to the four elements—red, denoting fire; blue, air; green, water; and the brown, yellow or russett, sand or earth." Thoth, the god-creator of men, science, etc, and the goddess Nepthe, mother of gods, etc., both have green flesh. In the Egyptian religion, water was green, because it was the primitive agent of the creation.

This hue, according to other authors, signified hope, immortality, symbolic of victory, while the Druids considered green as an emblem also of hope. We speak of jealousy as "the green-eyed monster."

The color, hyacinth, is emblematic of perfection, hope, "and constancy in spiritual combats." Josephus says purple is symbolic of the element, water. This color denotes dignity, "the purple of the kings," etc.

An authority states: "There are two shades of black existing in symbology, one the opposite of red, the other of white." "The first designates ignorance arising from evil and all selfish or hateful passions. The second indicated ignorance of mind, not confirmed by wickedness of heart, and seeking to leave that state of intellectual death."

Brown, red or russett, signifies the oppressor or violent, and in addition thereto, filthy, to be in affliction, and Ishmaelites. The medieval Christians considered red symbolic of divine love.

Man, as in many other instances other than the subject of this paper, has had faith in many things, in what he believed to be inherent virtues, or medicinal properties in precious stones. Gems were used as talismans, medicine, and he considered that they had supernatural powers; they cured disease, protected from the "evil-eye," frustrating the evil influences of magic,

*An Egyptian God.

witchcraft, incubi and succubi, terrors of the night, etc., and certain stones rendered him invisible, and sometimes, aided him in controling evil spirits, also protected him, from noxious vapors and the plague.

Stone is the symbol of faith and truth. Precious stones are called hard stones of truth. Astrology and prophesy were related to medicine, forming another link in our professional chain of faith, the love of the marvelous, as portrayed so far in this paper.

By means of suitable gems, one could foretell the future—a prognosis—as well as review the past. The properties of precious stones were many, being quite diverse, collectively and individually. By means of their supposed influence, they obtained for man, favors of great personages, made the possessor of precious stones, healthy, strong, amiable, wise, lovable, contented, gave him that piece of mind that passeth all human understanding, invincible, brave and a phophet.

When "used as drugs, either alone or with electuaries, with or without prayers, incantations or other prescribed formulary they were supposed to cure disease."

Certain gems caused evil or good on certain days, due to planetary influences. Seeing or handling them on the eve of a journey, or at certain phases of the moon was auspicious. Even the dreaming of them was fraught with good.

All yellow precious stones were appropriated for adornment on Sunday, or the sun's day. On Monday, the moon's day, white stones were used on the person, the diamond being the exception. Tuesday, Mar's day, garnets, rubies and all red stones. Wednesday, a blue gem was the correct stone to be worn. Thursday, the amethyst, and all other similar tinted jewels, as it was Thor's day. Friday, Venus' day, and the emerald was to be worn. Saturday, Saturn's day, the diamond was the gem for adornment.

Certain gems were appropriate for certain months and, under the control of astrology, has mystical influence over the twelve parts of human anatomy. If the birthday stone corresponds with its particular Zodiacal sign, and was worn the wearer was protected from evil, etc. For example the amethyst's zodiacal control is pisces, January 21st to February 21st.

The Jewish cabalists had twelve gems engraved each with an anagram of the name of God, and was supposed to have some mystical power over, and a prophetical relation to the twelve angels. The Angel Gabriel was represented by the onyx. Twelve gems were emblematic of the twelve parts of the human body, twelve tribes of the Children of Israel, twelve hierochies, and so on. These cabalists, professed to tell by the change in color or brilliancy of the stone, the future.

According to some authors, certain gems are affected by certain atmospheric conditions and lose their luster, etc. Others absorb the rays of the sun, such as certain varieties of the diamond. The ancients believed the size of the gem influenced results in some cases, in curing disease.

The twelve apostles were represented by twelve gems—St. Peter, by jasper. Even the planets had their particular jewels, for Saturn is represented by the turquoise and sapphire, Mars by jasper and emerald.

The Hindoos made offerings to hostile stars by bestowal of precious stones upon them. If they feared the sun, a valuable ruby was offered to propitiate that god or planet; for the moon, a rare pearl, and if sani, a star affecting to a powerful degree the destines of men, a sapphire. They always averted the evil influences by wearing certain stones. If the sun was adverse, the cat's-eye; if the moon, the sapphire, etc. It is said the Orientals are very dogmatic in their belief in the virtues of gems, and it is heresy to believe otherwise than that they have an influence over the mind and body. The mystic ascribes a certain significance both to the gem and its various colors. The diamond must be pure and flawless when used in disease; else trouble results. Hindoos divide them into castes; male and female castes must not be allowed to mix, etc.

Gems were considered to indicate the state of health of the donor or wearer, and if they became dull or opaque or colorless, they signified impending danger and death. Great stress was laid upon what they considered a fact, namely, that in contact with poisons, or in presence thereof, the stone sweated, or it changed or lost its color, for in early ages man was an adept in the art of poisoning, as death in that

era stalked among the beautiful, the wise, and the great. None were exempt from poisoning, if he had enemies. From the highest potentate to the most humble citizen, there were toxicologists of no mean merit and were highly and also fatally proficient in their special calling.

I will mention a few gems used in the treatment of disease, obstetrics, eye troubles, insanity, hernia, variola, etc., and poisoning according to each jewel's supposed prophylactic and therapeutic effect. Many stones had practically the same virtues and uses, while others had different or additional merits when applied to the treatment of the sick. They are are as follows: The diamond, amber, quartz, amethyst, beryl, ruby, garnet, sapphire, emerald, coral, pearls, agate, and so on.

Mr. W. Tassin, in his excellent article, after calling attention to the therapeutics of gems among the ancients and others in the Middle Ages, says as follows: "In Paris a school has been established which has for its object the study of magnetic emanations, radiance, and crystals. In Nice, a Dr. de Lignieres has issued a prospectus of a work of 644 pages that seriously considers "the medicinal properties and virtues of precious stones."

Gems in ancient days sometimes, under certain conditions, and in certain individual cases, had a psychic effect. They caused vomiting by irritating the stomach, catharsis, by causing enteritis in constipation; while in other diseases, if applied locally or taken internally, caused counter irritation, acting on ulcers as a local stimulant, and setting up inflammatory conditions both locally and within the intestinal tract.

That certain individuals were mentally affected by the physician's presence, gems and mode of administration is not to be questioned in our era. You can call it mental therapy, hypnotic suggestion, Christian science, or whatever name you care to suggest to meet the condition presenting itself in the case of any patient before you.

Think of bread pills which can be used in certain nervous conditions; also used as a cathartic. Fright may cause evacuation of the bladder and bowels. Shrines, heathen and otherwise, holy water, religious processions, saint's relics of all creeds, sacred streams, springs, wells, prayers of the saints, church community, individual and all other methods, even the presence of the attending physician, etc., all have made deep mental impressions and cured many so-called incurable cases. After all, faith plays a most important part—nature doing the rest. The same principle holds good in really diseased individuals; in our system of scientific and rational thearpeutics, we give the desired remedy and nature does the rest.

The old physicians were but human and seemed to have had in the very marrow of their bones, unknowingly so, the tenets of homeopathy in practice, if not in dosage of likes curing likes—by giving powdered irritating gems in the treatment of dysentery and other inflammatory diseases.

There have always been one or more prevalent facts, cropping out here and there in my various papers read before this body and other societies, being as it were dressed in new clothes The old historical facts of savage or primitive ancient and modern, medicine appears in medical literature from time to time, as one and the same idea. For instance, organic therapy, is limited, as in past ages, among our savages of to-day, and faith in remedies is not understood. As you have seen, the savage drank man's blood to get his soul, as it were; ate his heart to become brave, etc.; fed hyena's brain to a man to make him stupid; the eyes of an owl to an elephant to make the animal see at night, and those desiring children ate frogs because they laid so many eggs, and so on down the list of everything. There is some resemblance by comparison, with our own existing theories, and the idea is to possess something needed by the individual.

I read a paper before the Therapeutic Society of the District of Columbia, of this city, entitled "Finger-Ring Lore, and Its Relation to Medicine," which is similar in much of its details, and yet still dissimilar in materials.

That there was a relationship in remote ages between superstition, faith, medicine, astrology, colors, (symbology), etc., and the therapeutics of gems, to my mind, seems quite clear. We may ridicule, sneer and laugh at our most ancient ancestors as well as our comparatively modern medical authorities. But this fact remains: we are superstitious to-day, and we had better laugh at ourselves, for we

still linger in the ages of our ancestors, with its miracles, shrines, pathies and faith cures. We are following fads and vague fashions, like physicians of centuries past. We still worship at the altars of superstition in our new white apparel in the most sacred temple of the marvelous. We are following too often in the footsteps of our predecessors in our seemingly new garments arrayed.

"Oh, wad some power the giftie gie us
To see oursels as others see us!"

Foot Note.—I am indebted for material to the following authors' works: Frederick Portal, translated from the French by John W. Simons, Albert G. Maclsey, Wm. F. Warren, Wm. Jones, Charles Edwards, M. Joly, and especially W. Tassin's article; Thos. S. Sozinskey and others.

According to Ptolemy's remarkable book, Medical Astrology originated in Egypt.

Hippocrates "gives special prominence to the influence of the Moon, dwelling particularly on its production of critical changes in disease.

Virtruvius says Astrology was brought from the East by the Chaldeans, of whom Berosus, the historian, was the "first of them." He settled at Cos, and opened a school there.

Galen wrote a book on Astrology.

Sozineskey says in a work entitled "Plea for Urania," issued in 1854, it is said, less than 200 years ago, a man desiring to become a practicing physician, had to pass an examination on Astrology.

EXTENSIVE LACERATIONS OF THE CERVIX UTERI, INVOLVING THE PARAMETRIUM —THEIR SIGNIFICANCE AND TREATMENT.*

By GEORGE TUCKER HARRISON, M. A., M. D., New York, N. Y.

Consulting Surgeon to the Woman's Hospital, Consulting Obstetrician to the New York Infant Asylum; Consulting Gynaecologist to the Misericordie Hospital; Surgeon to St. Elizabeth's Hospital, etc.

A priori considerations might induce the belief on the part of some among my audience that the discussion of this theme before such a body of learned men of our profession, is like carrying coals to Newcastle, or owls to Athens. I hope, however, to convince you that this view is erroneous. I shall give you a few illustrative cases before analyzing the subject in detail.

A few years ago a case of eclampsia occurred in my service at the New York Infant Asylum; I found that the patient was in labor, and I told the house physician to let labor go on and not intervene until the cervix was well dilated. The symptoms were not of such a threatening character as, in my opinion, indicated active intervention. During my absence from the hospital the house physician became alarmed by the recurrence of the convulsions, and had recourse to accouchement force. The consequence was that, on my opportune return, I found that my assistant on the house staff had ruptured an artery on each side, owing to a double laceration of the cervix involving the parametrium. He had controlled the hemorrhage by applying a Pean's forceps to the broad ligament on each side of the cervix. He had tried to secure the bleeding vessel of one side by suture, but in vain. I showed him how to pass the suture behind the vessel deep in the parametrium, and thus controlled the hemorrhage, the cervix being drawn down by a bullet forceps. As a result of the manipulation to which she was subjected, the patient had an attack of parametritis, a certain amount of septic infection occurring on one side, and convalescence was protracted.

About five years ago I was consulted by a lady who gave as her history symptoms of constant pain in the lower part of the abdomen, which dated from a confinement six years previously. The delivery was difficult, and accomplished by active intervention. The puerperium was attended by high fever, pain, and was protracted. This lady consulted a number of physicians, and all sorts of operations were suggested, including removal of the ovaries, of the adnexa, and even hysterectomy. Vaginal examination, with bimanual palpation revealed the fact that she had suffered an extensive laceration of the right side of the cervix, involving the corresponding parametrium. There was a large cicatrix, painful on touch, extending into the parametrium which hindered the uterus in its movements, and fully explained the annoying sensations of which the patient complained. In the performance of the operation, clearly indicated, I attempted to dissect out all the cicatricial tissue in the parametrium with the result that I entered the pelvic cavity. That was doubtless the original lesion, and easily explained the dangerous symptoms manifested during the puerperium. The patient recovered her health perfectly after the operation. The significant fact here is, that this woman was examined by a number of physicians, and not one made the correct diagnosis.

With the gradual development of the art and science of obstetrics, it must be borne in mind that in the future, these deep lacerations will be more apt to occur than in the past.

*Read before the thirty-ninth annual session of the Medical Society of Virginia, at Richmond, Va., October 20-23, 1908.

Formerly it was laid down as the cardinal rule that no operative procedure directed to the delivery of the child should be performed until full dilatation. At the most, it was allowable to use the forceps or apply version, when indicated, after premature rupture of the bag of waters, even though full dilatation had not been completed, with the consequence of more or less of a tear. Now, however, in cases of eclampsia or placenta prævia, version and extraction are called into play, although a relatively narrow os uteri and cervix must be dealt with. In these circumstances we have more to dread from a long lasting birth than from the consequences of a laceration.

This change of the point of view, I need hardly remind you, is due to the security engendered by asepsis and antisepsis, and especially by the application of surgery to obstetrical practice. It may not be amiss also to remind you that in the rare cases of *placenta praevia* attended by a long cervix not dilated or dilatable the application of the vaginal Cæsarean section is indicated, and danger of laceration is thus avoided.

I would like to remark here, that if the use of the Bossi method of instrumental dilatation is largely adopted, the number of extensive lacerations must be greatly increased. It is important that the laceration should be diagnosticated as soon as it has originated. The resistance offered in the extraction of the head, the sudden yielding of the tissues, the hemorrhage immediately following birth, the fact that bleeding presents, notwithstanding the uterus feels hard and well contracted, that the blood does not coagulate, is not dark, but bright red and fluid, are sufficient diagnostic criteria. In the cases that have come under my observation in private and hospital practice, and in consultation, I have always been enabled to control the bleeding by suture, but I am aware that cases may occur in which the suture may fail, or is not available on account of the lack of proper assistance. I think it, therefore, fortunate that the distinguished professor of gynecology at the University of Bonn, Dr. Fritsch, has introduced a method which may be applied under all circumstances, and is eminently efficient.

Let us hear, in the first place, his views on the use of the suture: "My experience has taught me," he remarks, "that the suture which I once recommended, and which I have often enough used, does not give certain results. I have seen many a post mortem, in the course of years in which the suture was used *secundem artem*. The rupture is deepest at the point at which the parametrium is attached to the cervix; nay, I have seen cases in which the external os uteri and the fornix vaginæ were intact; above, however, there was a deep laceration through the cervix, in which two fingers could not attain to the end. At the moment of the passage of the head the cervical wall is only from two to three mm. thick. If the physician in the delivery of the after-coming head, with the finger in the mouth of the child, draws directly downward, and the head occupies a transverse position, he involuntarily presses the occiput before and to the side against the pelvic wall. If, now, the assistant forces the head down from the outside, the thin wall of the cervix ruptures at the point at which the occiput demands a quite considerable space. The narrow forehead is much below the narrow place when the last coming occiput ruptures the cervix. The laceration is generally in front of the uterine artery, but if this vessel is fixed by an old parametric cicatrix, it may also be torn. I have several times, in a post mortem examination, seen in the midst of a laceration the two large lumina of the ruptured uterine artery, opposite each other. The vaginal branch may also be of the thickness of the radical. A hemorrhage from a ruptured *ramus vaginalis* may cause death, even in a non-pregnant woman."

Other considerations add force to these views when the portio is seized with the bullet forceps and drawn down to the vulvar opening for the purpose of uniting the torn surfaces by suture; the uterus follows the traction, but not the parametrium; the deepest place of the laceration, which is in the parametrium, remains above.

Have any of you, gentlemen, endeavored to repair a ruptured uterus after opening the abdominal cavity? If so, you must have noticed that while you could suture the rent in the uterus, you found it impossible to bring together the entire wounded surfaces in the pelvis, operating from above. I fully agree with Fritsch, that the attempt to control the hemorrhage by the tampon is a waste of time and attended by disappointment. The method em-

ployed by Fritsch is designated by him as that of double compression, and is thus accomplished. The placenta is, first of all, removed; this is easily done, as the inner os uteri is either wide or lacerated. The uterus now contracts readily. The physician then, with the right hand, presses the anteflexed uterus as deep as possible into the pelvis, and in that way, all coagula are forced out. The operator, standing on the left side of the bed, seizes the vulva with the left hand, pressing the *labia majora* together, and forces them above into the angle of the arch of the pubes, as if he would shove the entire pelvic floor into the pelvic cavity above. The manoeuvre would be found to be difficult in the case of a woman who had not been just delivered. Not so with a woman recently delivered, in whose case the parts are flabby and lie on a lower plane, as it were.

Now, with the hand above co-operating with the hand below, the parts are forcibly compressed. The lower arm is not so readily paralyzed, as its elbow rests on the bed; when the upper arm is paralyzed, an assistant is instructed to press on the upper hand with his or her two hands—to lean on it, as it were. It matters not whether the laceration is on the one side or the other, pressure is made directly downwards. The hands are held in this way for half an hour, three quarters, or even longer. The patient, meanwhile, lies perfectly quiet, and has restorative drinks administered. The pressure does not give pain. The upper hand is slowly withdrawn, and the uterus remains generally, strongly anteflexed, as if fixed. The bleeding does not recur because thrombosis has occurred. A bag of sand or shot may substitute the upper hand. Fritsch has, by this method, controlled, in a few minutes, colossal hemorrhages. The advantages of the method he thus enumerates:

1. The entire treatment is extra-vaginal; a danger of infection by the procedure is consequently excluded.

2. The blood also which would be certainly lost with suture or tampon, remains in the body.

3. The hemorrhage is controlled in the most rational manner from the fact that the bleeding surfaces are pressed together so firmly that there is no longer a space in which bleeding could take place. Provision is consequently made for adhesion and healing from the fact that the raw surfaces are pressed on and into each other.

4. No after treatment is necessary; when the hands are released if no bleeding takes place, any further manipulation is superfluous.

The obvious advantages of this method are its simplicity, its ease of application under all conditions, and its efficiency; one surpassing merit it has is that of excluding the possibility of infection. It will be remembered that in the first case I narrated, attention was called to the fact that an attack of parametritis followed the manipulations adopted to close the laceration by suture. With reference to the remote effects of these extensive lacerations, I would remark, that it is not at all necessary, I believe, to endeavor to exsect the cicatricial tissue from the parametrium in its entirety. Two dangers menace the operator; he may, in the first place, have my experience, and enter the peritoneal cavity; and, secondly, he may open the uterine artery, or one of its branches. The morbid symptoms are evoked in these cases by the fixation of the uterus; if, therefore, the mobility of the uterus is restored by division of the cicatrix running out into the parametrium, in the performance of trachelorrhaphy, the patient will get relief.

I lately had a case, a private patient, at the New York Infant Asylum, which beautifully confirmed the efficiency of the method of treatment described above. The patient, a woman about seven months pregnant, had symptoms of impending eclampsia. I induced premature labor by packing the cervix with iodoform gauze, and then by manual dilatation after the removal of the gauze. She had sustained a severe laceration in a previous confinement, for which trachelorrhaphy had been performed. In dilating, the cicatricial tissue gave way, and I caused anew an extensive laceration involving the parametrium, or rather, I reproduced the old lesion. I delivered the patient of a dead infant by podalic version. I did not suture the laceration at once, for fear I might set up septic infection in consequence of the necessary manipulation involved in such an operative procedure. At first there was apparently no hemorrhage, but after I left the hospital a furious hemorrhage took place. My

noon physician packed the uterine cavity with iodoform gauze. This did not control the bleeding but partially, as was to be expected, and I, therefore, resorted to the method of Fritsch, with the aid of the house physician, the pressure being continued for half an hour or more—the result being perfect control of the hemorrhage, and subsequent healing of the laceration.

132 *West Seventieth Street.*

SOME ACCEPTED FACTS AND MOOTED POINTS IN THE MANAGEMENT OF APPENDICITIS.*

By STUART McGUIRE, M. D., Richmond, Va.
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Before certain societies it is both proper and desirable that unusual cases should be reported, original operations described, and new theories advanced, but at a meeting such as this, I think the time at our disposal should be devoted to the discussion of the diseases we are most frequently called upon to treat; and hence those we should endeavor to know most about. I believe we should recognize the fact that we are practitioners, and not scientific investigators, and that we should leave the solution of new and complicated problems to the men working in laboratories and large metropolitan hospitals, and be satisfied ourselves if we adopt the best and most accepted methods, and apply them skillfully and efficiently for the relief of our patients.

Personally, entertaining these views, I am glad to learn from the program that practically the entire time of this meeting will be devoted to the consideration of appendicitis and typhoid fever. Those who read papers may have nothing essentially new to present, but the same may be said of ministers, who have preached the Gospel for many centuries, and whose labor is not in vain.

History.—Appendicitis was first clearly recognized and accurately described by Fitz, of Boston, in 1886, and the profession of America has been largely instrumental in working out the various problems with reference to its diagnosis and treatment. The English and Continental surgeons, for a time, derisively called it the American disease, and were obstructionists in the advance of knowledge concerning it, and although they have now fallen in line, they have never been able to keep pace with the work of the profession in this country.

Frequency.—The frequency of appendicitis is shown by the fact that, according to Osler, it causes the death of one out of every fifty who die, and by hospital records which show that, in recent years, it is responsible for from one-fourth to one-third of all the operations performed. The disease, however, is not as frequent as one might infer from the society notes in a daily paper as, from personal observation, I have known many patients to attribute confinement in a sanitarium to appendicitis, when their disease was in reality a less interesting and fashionable ailment. The laity are under the impression that the number of cases of appendicitis is increasing, but this, of course, is not so. Cases are now correctly diagnosticated as appendicitis, whereas, before they were called gastritis, peritonitis, and inflammation of the bowels. Robert Morris said that if a torch were applied to the tomb of every man dying of unrecognized appendicitis, the world would be a bon-fire.

Why the disease was not recognized earlier.—It seems difficult for us, to-day, to understand how a disease which was so frequent could have escaped recognition by clinicians of the past, who were justly noted for their accuracy of observation. The explanation is the fact that the symptoms of appendicitis, originating in an organ without function, were characterized by reflex disturbances of the function of other and more important organs, and hence were misconstrued during the life of the patient. If death ensued and a post-mortem was made, the secondary complications so obscured the original lesion that it was overlooked. A physician told me that while in New York taking a post-graduate course, in 1878, he saw a case in the ward of one of the hospitals which was treated first for gastritis, then for peritonitis, and finally for locked bowel. When the patient died, a post-mortem was made, and the pathologist commented on the fact that the inflammation had been so severe that the appendix had sloughed off. Two

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years later, when engaged in private practice, this physician saw another case die with similar symptoms, and before making the post-mortem, he told his colleagues that he was certain that they would find the appendix gangrenous, and such proved to be the case. In neither instance did it occur to any of the physicians that the condition of the appendix was the primary cause of the trouble.

Living versus Dead Pathology.—Post-mortem examinations have, of course, been of inestimable service in increasing our knowledge of disease, but conclusions based on them have often been erroneous, because they are done at a period when secondary complications and terminal infections obscure the initial lesion. The pathologic picture of the early stages of disease as disclosed during life, on the operating table, are immeasurably more valuable than the findings after death, at autopsy. This fact is apparently not appreciated by the physician, or if it is, he fails to take advantage of it. Many will drive ten miles to see a post-mortem, who would not go around the corner to witness an ante-mortem demonstration of the same disease at a more instructive stage of its development. In visiting the various surgical clinics of this and other countries, I have often deplored the fact that they were not attended more largely by medical men. Last summer I made a trip to see work in Chicago, Rochester, Cleveland, Boston and New York. In each city I found a number of surgeons. Some were young and some were old; some were rich and some were poor; some were famous and some were unknown. All were possessed by a desire to learn. I do not recall meeting a single physician. They must have been either at home pursuing their usual occupation, or at the seashore, in the mountains, or abroad, taking a vacation. It is sometimes said that the professional and pecuniary rewards of the surgeon are greater than those of the physician. If this be so, where lies the credit or the blame of the reversal of conditions previously existing?

Operate in Every Case.—The one generally accepted fact in the treatment of appendicitis is that every case should be operated on. There is a wide difference of opinion, however, as to when the operation should be done, how the various steps should be performed, and the way the case should subsequently be treated. It is admitted that many cases recover from acute attacks under medical treatment: hence it is obvious that if all cases are operated on, some cases will be subjected to unnecessary surgery. Statistics show that in a hundred cases, eighty will recover without the use of the knife, but they also show that twenty will die. Of these eighty who recover, many will have recurrent attacks, and most of them will suffer from digestive disturbances which cripple their usefulness. As it is impossible to say from the history, clinical symptoms or laboratory findings which cases need an operation, and which do not, it is, therefore, better to operate on some who do not require it, than to fail to operate on those who urgently need it, especially as the operation in itself has practically no mortality. I say this advisedly, for I do not believe an appendectomy entails any more danger than a trip on the railway. There are, of course, the danger of the anesthetic and the risk of infection, but these, in skilled hands, are accidents no more likely to occur than catastrophes on well regulated railroads. Frequently you see in the daily papers, and sometimes in medical journals, the statement that a patient has died on account of an operation. Usually the fact is that he died from a disease which the operation failed to arrest, and frequently because a surgeon was called in as a last resort to save life, and not as an early effort to restore health. Let the profession differ on other points, but let it unite in teaching the laity that appendicitis is a surgical disease, that every case requires an operation, and that, barring accidents, which occasionally happen in well regulated hospitals as well as in well regulated families, there is no danger in surgical intervention.

Appendicitis now a Question of Economics.—Years ago, when many cases of appendicitis died because operations were postponed until the patient's condition was hopeless, the great question with both the profession and the laity was the mortality. Later, when results were improved, but when operations were still delayed until complications developed, and patients were left with crippling sequelæ, the question was morbidity. To-day, when prac-

tically all cases recover, and are completely restored to health, the question is economy.

A patient, when informed that he has appendicitis, no longer asks what is the danger to his life, rarely discusses the possibility of hernia or other complications, but wants to know how much the operation will cost him in time and money. The question of the length of his stay in the hospital depends largely upon whether it is found necessary to employ drainage. The question of the amount of the surgeon's charge depends chiefly on the patient's ability to pay. It is a fact that there is no case on record where an operator has declined to do the work without a fee if the patient was poor, or where he has failed to require a munificent sum if the patient was rich. The laity should be impressed with the fact that a surgical fee covers three separate factors: First, the satisfaction of having an operator of reputation; second, the security of having one with skill and ability; and third, the physical relief from the actual mechanical work.

When to Operate.—The question of when to operate for appendicitis will perhaps never be satisfactorily settled. Personally, I am convinced that Murphy was right in his bold and dogmatic statement made many years ago, that we should operate on all cases of appendicitis as soon as the diagnosis is made. There are, of course, a few cases where this rule will work hardship, but I am sure that if it is rigidly followed, it will accomplish the greatest good to the greatest number, and that the surgeon who follows it will, in the end, save more patients than the one who does not. The objections made to it are that we should not operate upon the convalescent or the moribund. The answer is that it is sometimes impossible to diagnosticate these cases. Patients apparently improving and on the road to recovery sometimes develop a fatal complication, and patients apparently dying sometimes get well by means of a timely operation performed by a courageous surgeon.

Ochsner, by his teaching, has, in my opinion, caused the death of more patients with appendicitis than his personal ability as an operator has enabled him to save, and this not because his teaching was wrong, but because it has been misunderstood, and his treatment misapplied. Ochsner believes in operating on all cases of appendicitis, but in a certain class he advises waiting, employing gastric lavage, rectal alimentation, and Fowler's position, until the inflammation becomes localized, and the patient in a more favorable condition for surgical intervention. Personally, I believe that Ochsner's treatment will save some cases which would otherwise be lost, but despite this fact, I am satisfied that it would be better for the profession and for the public if his teaching had never been disseminated. It has been seized upon by the general practitioner as a medical cure for appendicitis, and has been the excuse for procrastination which has filled many an untimely grave.

How to Operate.—An extremely important factor in the success of a surgeon in operating for appendicitis is his ability to differentiate in cases, and to recognize the fact that different groups must be treated in an entirely different way. For practical purposes, cases may be divided into three classes: First, those in which the inflammation is confined to the appendix; second, those in which the inflammation has extended beyond the appendix and resulted in a localized abscess; and third, those in which the inflammation has caused diffuse peritonitis, with the presence of free fluid in the abdominal cavity.

I. *Chronic and Acute Appendicitis.*—In chronic appendicitis where the operation is done between the attacks, or in acute appendicitis where the operation is done before inflammation extends to adjacent structures, the technique of the operation is not of much moment. The differences of opinion which exist among surgeons are with reference to the location of the incision, the treatment of the stump of the appendix, and the length of time it is necessary to confine the patient to bed.

1. The incisions in most common use are a vertical incision through the right rectus, or an oblique incision, with separation of the fibres of the external and internal oblique muscles at right angles one to the other. Either method gives good results, although, personally, the gridiron incision appeals to me as the one inflicting less traumatism, giving most direct access to the field of operation, and guaranteeing the greatest assurance against hernia.

2. The methods of dealing with the stump of the appendix are endless. The two in most frequent use are simple ligation, and ligation with inversion of the stump by means of a purse-string ligature. I usually practice the the latter, as I have never experienced the complications believed by some to be theoretically possible from burying infected tissue, and I think the purse-string suture lessens the possibility of the primary ligature being blown off by gas pressure, and removes the probability of adhesions which otherwise might form on a denuded surface.

3. The question of the length of time it is necessary to keep the patient in bed after a simple appendectomy is one of great importance. The tendency is to make the patient's stay in the hospital shorter and shorter. This is partly due to motives of economy, but is also influenced by a desire to advertise the surgeon. Between too great conservatism on the one hand, with the attendant loss of time and money, and too great radicalism on the other, with the danger of hernia and other complications, there must eventually be derived a happy mean. For my own satisfaction, some time ago, I sent a circular letter to fifty prominent surgeons, asking the practice of each. The answers varied so widely as to be practically worthless, one stating that he had patients walking about the following day, and another that he kept them in bed forty-two days. My own custom is to keep patients recumbent ten days, allow them to go about in a wheel chair two days, and to discharge them at the end of fourteen days. I heartily deprecate the tendency to competition which exists between some surgeons as to who can get their cases out quickest. The laity and profession ought to be made to understand that, under given circumstances, a wound will not heal quicker for one operator than for another, and the length of time it is thought necessary to keep the patient in bed is not a measure of surgical dexterity, but of surgical judgment.

II. *Appendicitis with Abscess.*—The technique for operations of this type depends entirely upon whether the abscess is adherent to the abdominal wall, and can be incised and drained without opening the general peritoneal cavity, or whether it is not adherent and can only be reached after opening the general peritoneum. If the abscess is adherent to the parietal peritoneum, it should simply be opened and drained, and no effort made to locate or remove the diseased appendix. With all due deference to those who do not agree with me, I consider it a surgical crime to break up the protecting wall and to liberate infectious fluid into the peritoneal cavity, when a safe exit can be given the pus by simply following the indications of nature, and making an incision at the point where she is endeavoring to effect drainage.

If the abscess is not adherent to the peritoneum beneath the incision, but is located between the folds of the omentum or behind the cæcum, in a position in which it can be reached only by opening the general peritoneal cavity, then an entirely different technique must be pursued. After the abdomen is opened and the inflammatory mass located by palpation, it should be carefully and effectually isolated from adjacent structures by numerous pads of gauze wrung out of hot saline solution. Adhesions should then be separated until the pus collection is opened. The abscess should be gently sponged out, and the appendix sought for and removed. The infected area should be drained with strips of gauze enclosed in a protecting layer of rubber tissue, and a tube should be inserted through the lower angle of the wound to the bottom of the pelvis, and the patient put to bed in an exaggerated Fowler's position.

When an abscess is drained and the appendix not removed, the patient should be told that the operation was not for appendicitis, but for an abscess which was the result of appendicitis. He should be made to understand, that the appendix was not removed, advised of the possibility of future trouble, and warned to apply promptly for surgical relief if he suffered abdominal pain.

I have recently had correspondence with a number of prominent surgeons to ascertain their views as to the necessity for a second operation for the removal of the appendix left in the abdomen at a first operation. I have secured a large number of opinions, and find that while all agree that the organ should be removed if it causes symptoms, they are about equally divided as to the wisdom of operating

on every case as a routine method. As an example of the divergent views, I will cite Dr. J. M. T. Finney, of Baltimore, who writes that in all cases of abscess treated by simple incision and drainage, he earnestly advises a secondary operation for the removal of the appendix. He was forced to this opinion by seeing three cases of death during secondary attacks of appendicitis after an appendiceal abscess had been drained and the appendix left in.

On the other hand, Dr. Roswell Park, of Buffalo, writes that he hardly ever advises a secondary operation to remove an appendix which was not hunted up and removed when an abscess was drained, unless it seems to be producing occasional or persistent, even though mild, symptoms or discomfort, *i. e.,* so long as it remains innocent and inoffensive, he does not feel like disturbing it, but when it growls, he would urge its removal.

I have also written to twenty-three patients for whom I had opened and drained abscesses without making an attempt to remove the appendix. I found that all these cases were in good health, that none of them had been operated on a second time, that only two had had recurrence of abdominal symptoms, and therefore, I am disposed to agree with the opinion of Dr. Park, that a second operation should not be done as a routine measure, but only when called for by symptoms indicative of trouble.

III. *Appendicitis with Diffuse Peritonitis.*—Cases in which there is perforation of the appendix and free fluid in the general peritoneal cavity have, until recently, been the terror of the surgeon. The old method of opening the abdomen, removing the appendix, washing out the peritoneal cavity, and making counter incisions for multiple drainage, was followed by a mortality of about eighty per cent. There has been, to my mind, no recent advance in surgery so brilliant in theory and so practical in results as the new technique of treating diffuse suppurative peritonitis. A short incision is made over the appendix, and the diseased organ removed if it is readily accessible. A second incision, not necessarily more than an inch in length, is made in the mid-line over the pubes. A rubber tube one-half inch in diameter, with openings on the side, is introduced through the supra-pubic opening and carried to the bottom of the pelvis. No irrigation of the abdomen should be practiced, no effort even made to sponge out the pus, but a voluminous dressing applied, and the patient quickly put to bed in an exaggerated Fowler's position. Saline solution should be slowly and continuously given by rectum; the stomach irrigated if vomiting is persistent; and the heart and kidneys stimulated by the hypodermic use of sulphate of sparteine. Since the adoption of this method the mortality in this class of cases has been reduced to about five per cent.

INEBRIATES AND WHAT TO DO WITH THEM.*

By J. S. DeJARNETTE, M. D., Staunton, Va
Superintendent Western State Hospital, etc.

An inebriate is one who is habitually addicted to the excessive use of alcoholic drinks, morphine, cocaine, or other agents causing exhilaration and stupefaction, and whose mind is altered or impaired from the direct effects of his drink or drug.

There is a wide range of variation in this definition, as it includes the man who keeps himself gentlemanly merry, and all intermediate stages down to the ordinary sot.

The drunkard usually commences to drink voluntarily, but after accustoming himself to the use of liquor, he finds he cannot abstain from it without great mental and physical suffering. It is said the will power required to keep this class from drinking would enable one to hold his hand in the fire. Therefore, it usually requires the assistance of others to help him to "cut it out," as he expresses it. The drug fiend is in the same relative position to his drug as the drunkard is to his dram, with the exception that the above symptoms are intensified. Both classes are occasionally unable to attend to business after the continuance of the habit for a long time without their accustomed stimulant, and are, therefore, forced to continue its use, and are literally "damned if they do," and "damned if they don't."

Classification.—In a partial classification we have enomania, or wine madness; narcomania,

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or stupor madness; polydipsia, or much thirst; dipsomania, or thirst madness; mania-a-potu, or delirium tremens; Karssakow's psychosis, or disorientation, pseudo-reminiscence, and loss of memory for recent events, etc.; alcoholic hallucinosis; alcoholic dementia; alcoholic pseudo-paresis; morphinomania or morphinism, cocainism, etc.

Responsibility.—The voluntary drunkard is held by the law of the land as responsible for his acts as if he were sober. This, to the casual observer, appears harsh, and in some instances it is; for one in this condition is liable to do and say what he would not do and say if his brain were not poisoned. More murders are committed from the effects of alcohol than from any other cause, epilepsy ranking next.

Fourteen per cent. of epileptics are caused from alcohol. Therefore, alcohol is the indirect cause of the murders committed by fourteen per cent. of the epileptics.

Sachs, of Germany, says: "Fully fifty per cent. of all crimes are committed under the influence of alcohol." In England and America the per cent., no doubt, is equally as high.

The reason of the law is that every one is responsible who voluntarily puts himself in a condition to lose self-control, it being against public policy not to do so; for if drunkenness would excuse crime every one contemplating crime would get drunk, or partially so, and plead his condition as an excuse. Furthermore, the Holy Law holds "no drunkard shall enter the kingdom of heaven." If he were not responsible he could not be justly excluded on account of his habit.

Remote Effects.—The picture of the drunkard is very common to all of you, gentlemen; but the remoter effects are not nearly so apparent. On a closer study we find gastritis, cirrhosis of the liver, apoplexy, nephritis, arterio-sclerosis, paresis, epilepsy, dementia, delirium tremens, Korssakow's psychosis, multiple neuritis, lepto-meningitis, pachy-meningitis etc. Pathological changes found are in the first and fifth layers of the cells of the cerebral cortex, caused by excessive production of neuroglia. The cerebrum loses weight, and the ventricles are dilated, but the chief cerebral change is endarteritis, mostly in the small terminal arterioles of the cortex; also minute aneurysmal dilatations. The cortical-neurons present a gradual sclerosis, called the chronic change of Nissl.

And further, we find the curse not confined to the inebriate alone, but handed down to his offspring in the form of epilepsy, idiocy, imbecility, and a tendency to drunkenness and insanity itself.

Treatment.—In the treatment of these cases I believe in hot baths at a temperature of 105 to 110 degrees, lasting for half an hour at a time, and given from two to four times daily. Internally, I give strychnine three times daily, from a thirtieth to a sixtieth of a grain, with abundance of milk, soups, eggs, etc., and the patient is encouraged to drink as much water as possible. This treatment has given me perfect satisfaction, and the immediate effects of the liquor or drug usually pass off in from one to three days.

The "Keely Cure," "Hypnotic Suggestion," etc., are said to do good, but the inebriate is prone to relapse, whatever his treatment may be. Except in an unusually weakened condition, I immediately withdraw all whiskey, and in the case of drug habitues, all drugs. I do this in nine out of ten cases. Patients who have had the gradual reduction treatment tell me they suffer much less under the rapid method.

In morphine cases, after immediate withdrawal, considerable diarrhea and vomiting often follow; while in cocaine fiends I have never seen any bad abstinence symptoms. The habitues of morphine and cocaine come to us often with extreme emaciation, and under the above treatment they frequently gain one-half pound a day after the abstinence symptoms have subsided.

Of course, this treatment cannot be carried out unless the patient is under control, preferably in some hospital or sanitarium.

Most of these cases continue their downward course until their substance is exhausted, their credit lost, their families disgraced, and they land, mental and physical wrecks on the wards of some hospital for the insane, where no sooner are they built up than they begin to threaten law-suits on the hospital for detaining them, and are usually discharged after a few weeks' or months' treatment.

We all know their reformations last only until the first temptation arises, and like poor Rip Van Winkle, they continue to swear off after each drunk, and usually begin again by taking the "drink that does not count." To save the victim from himself, his wife from poverty and misery, his unborn children from transmitted mental and physical weakness, I believe we should establish an inebriate home, controlled and supported by the State. Laws should be made so that the inebriate can be arrested and confined in this home. The fact whether the party is or is not an inebriate may be determined by a commission composed of a magistrate, his family physician, and a neighboring reputable citizen. The commitment to the home should be for six months the first time, and one year for all subsequent commitments. If he elope, six months should be added to his term. They should be made to do a reasonable amount of labor, and in this way the institution would be almost self-supporting. At the same time the hospitals for the insane would be relieved of a very disagreeable class of patients.

Whiskey is credited with being the cause of from twenty to fifty per cent. of insanity, and as there are about 3,500 insane in the State, whiskey must answer for 700. Fourteen per cent. of epileptics are said to be caused by alcohol, and, as there is one epileptic to every 500 citizens in the State, we have 404 epileptics caused by alcohol. If these statistics be true, by controlling alcohol alone we would be able to diminish our insane 700, and our epileptics 404, making a total of 1,104. To remove the cause is the only reasonable way to fight disease, and prevention is far better than cure. This can be done, especially in hereditary diseases, by preventing the marriage relation between the unfit, such as those who have dipsomania, insanity, epilepsy, mental weakness, syphilis, tuberculosis, and inebriacy, except in cases where the woman is over forty-five years of age. This would perpetuate the race from healthy stock, and eliminate to a great extent the weaklings. Some writers advocate sterilization of this class, but at present this sounds extreme. However, in the course of time I believe some such measures as above mentioned will be resorted to, or the manufacture and sale of these agents be properly controlled or prohibited.

A FEW CLINICAL REMARKS ON THE DIFFERENT RINGS OBTAINED WITH HELLER'S TEST FOR ALBUMEN.

By E. F. RODRIGUEZ, M. D., Sagua la Grande, Cuba.
Local Sanitary Officer.

I usually practice this test, filling the fourth part of a test tube with the filtered urine to be tested. Keeping the tube at an acute angle with the horizon, and from a pipette, I let the fuming nitric acid drop slowly along the inside of the tube to the bottom. I take out the pipette, raise vertically the test tube, and observe the line of junction of both liquids.

In the case of albuminous urine, a milky ring, more or less distinct, with sharply defined borders will appear just at the line of demarcation. At times the reaction is delayed a few minutes.

In the case of urine highly charged with urates, a milky ring will be seen at the middle of the column of urine, above the line of junction of the acid with the urine. The superior margin is not well defined.

In the case of urine rich in urobiline, instead of the albuminous ring, Gubler's *hemapheic* ring will be seen, of a dark mahogany color, indicating, when well accentuated, active destruction of the red-blood globules.

A fine, greenish-black, delicate ring, better seen on refraction, over a greenish band, called by me *hepatic line,* is to be usually observed in cases of slow hepatic processes.

HELLER'S RING IN SO-CALLED CASES OF BILIOUS FEVERS OF AESTIVO-AUTUMNAL MALARIA.

In those cases of bilious remittent fevers where the tissue of the liver is not deeply affected, but where the urine contains albumen, underneath its milky ring a wide, deep-red band is to be noticed, which, together with the microscopical examination of the blood, settles the diagnosis. When, however, albumen is absent the wide red ring is replaced by another *almost black* with a red shade on refraction, a ring thick and wide, which I consider characteristic. When the liver-tissue is evidently affected, the band or ring is *reddish black.*

HELLER'S RING IN CASE OF YELLOW FEVER.

We all know how difficult it is at times to make the diagnosis of yellow fever. I think,

therefore, it is my duty to present to the consideration of the profession a new sign which I have observed, consisting in the appearance of the Heller's ring. *The white milky ring due to the albumen, which is early visible in this fever, is to be observed on top of a greenish band, which band is of a fatal prognostic meaning, if it becomes deep green in color.*

Here is a recent case, where the sign was used by me:

Name, Jose Martinet; age, thirty-four years; nationality, Spain (Ybira). Came from Nipe Bay; profession, sponge fisher.

This man arrived at Ysabela de Sagua (a harbor on the North Coast of the central part of Cuba) on the fourth of December of previous year. On the tenth, he suffered from an intense access of fever and ague, according to the statement of a brother of his; access was repeated the next night at neither of which a physician saw him. On the 13th Dr. Ayo, a physician residing at the port, saw him, and found temperature 37 degrees 5 C., pulse 90, respirations 38. Next day, temperature descended to 36 degrees C. during the whole day, till the morning of the 15th. This day I saw this patient, which had been considered by another doctor of this city as a suspicious case of yellow fever. I found earthy icterus of the skin, no ocular icterus. Some degree of mental indifference, pulse 104, very weak. Tongue very dry, fuliginous teeth, no fungous condition of the gums, which were sound. The abdomen was tympanitic, and there was great diminution of the urine; pain on deep pressure of the spleen and liver. Great dyspnœa. mitral regurgitation and aortic obstructive blowing sounds. Dullness on percussion over left lung; fine mucous rales at base of said lung. There had been epistaxis. Diazo reaction, positive. Heller's test: slight albumin ring, on top of no greenish band.

Blood examination made by Dr. W. L. Little, U. S. A., Surgeon to the Post Hospital, and separately by myself, showed abundant elements of the æstivo autumnal pernicious form of malaria.

POST-MORTEM EXAMINATION.

The most important points noticed were very much congested left lung, gray hepatization at the base. Mitral valve very patulous and stenosis of the aortic sigmoids. Dilatation of right ventricle; spleen almost black, weight, a pound; very friable. Liver mouscade. Smears were made with the blood from the coronary veins and pulp of the spleen but without success.

In this case, the absence of the greenish ring underneath the albuminous ring, together with the positive *diazo reaction* (which we call Guiteras sign, in honor of this eminent physician), and the other symptoms presented by the patient, made me pronounce the case as negative of yellow fever before the blood examination was effected, and decided upon the character of the infection.

MEDICINAL TREATMENT OF TIC DOULOUREAUX—WITH REPORT OF CASES.

By BEVERLY R. TUCKER, M. D., Richmond, Va.
Instructor in Nervous and Mental Diseases, Medical College of Virginia.

In the issue of April, 1908, of the *Charlotte Medical Journal*, in a paper on Tic Douloureaux, the writer called attention to the necessity of a thorough history and a searching examination in each case of this condition with the view of ascertaining the underlying cause. Special analysis of the blood, urine and feces are often requisite and the examination should include a search for trouble in the ear, nose, mouth, antrum and frontal sinuses to avoid diagnostic errors.

The vast majority of cases have definite metabolic and general conditions as causes, like rheumatism, gout, malaria, anemia, diabetes, infectious diseases, gastro-intestinal intoxication, nephritis, various metallic and other poisons, etc. In the series of cases reported in this paper, malaria and rheumatism stand out as prominent causes. There is another class of cases having such conditions as fracture of the base of the skull, extension from periostitis of the base, brain tumors or other brain lesions as causes, and while such lesions should be excluded in every case, we will not consider them in this paper upon medical treatment.

As a rule, patients should be put to bed and upon a liquid diet at first. Calomel and castor oil should be given as soon as the case is undertaken, and the bowels kept open thereafter with salts. External remedies, as hot salt bags, painting the skin surface and gums with iodine, and strapping the face to prevent movement

are often of use for the temporary relief of pain.

The most useful remedies for the control of pain as a symptom are strychnine in increasing doses, fluid extract of gelsemium four drops increasing to twelve, and tincture cannabis indica ten drops, t. i. d.—increasing to thirty, but relief from them is only transient. Morphia and the coal tar preparations should be avoided. To relieve the pain for any considerable length of time and to cure the condition, the underlying cause should be ascertained and actively treated. In cases, for instance, with rheumatism as a basis, sodium salicylate is the most useful remedy and is best given with sodium bicarbonate, pushing it to the limit of tolerance; in malarial cases, quinine in solution should be given until the physiological reaction is produced; in anemic cases, iron and arsenic are our most useful remedies, and other conditions as nephritis, diabetes and gastro-intestinal infections should be properly corrected. In many cases the affection is alleviated by the correction of defects in the eyes, attention to decayed teeth and the treatment of ear diseases, but we should not rely upon the correction of these conditions alone. In speaking of tic douloureaux the writer does not include mild cases of trifacial pain, but only those in which the typical spasm was observed.

The following is the report in out-line of thirteen consecutive cases of tic douloureaux treated by medical means. The first four of these cases were reported in the *Charlotte Medical Journal* for April, 1908, but later observations are made upon them.

Case 1. H. B., an old negro preacher, suffered from frequent excruciatng facial spasms, especially involving the two lower branches of the 5th nerve, and was seen in the early part of 1907. He had a history of chronic malaria and chronic rheumatism. He was put to bed and treated with quinine and sodium salicylate in heavy doses. His pain was relieved in a few days, but he was kept on treatment several weeks. Fifteen months afterwards his physician wrote that he had a few relapses which were controlled with fluid extract of gelsemium on the ascending scale from four to twelve drops. Otherwise he was free from pain and able to resume his vocation.

Case 2. Mrs. M. W. R.—Suffered in the Fall of 1907 from bilateral tic douloureaux and it was suggested to her physician by letter that quinine be tried in large doses as she lived in a malarial district. Six months later he wrote that the quinine quickly relieved her. She came under my care for neurasthenia in September, 1908, and had remained free from pain in her face.

Case 3. Mrs. R.—She was an aged lady of 88 years and had violent tic douloureaux of four years standing. She had rheumatic joints. Morphine failed to relieve her. She was seen in November, 1907, and spasms occurred every twenty to thirty minutes. On account of marked arterio-sclerosis and a delicate stomach it was hard to get her to retain very heavy doses of medicine. She, however, was put on sodium salicylate and quinine to the limit of tolerance. Her gums were painted with iodine and a hot salt bag applied, both of which proved of benefit. Two months later her physician wrote that she had no pain to any great extent. The pain afterwards returned slightly and this Spring, 1909, is very violent again. Her general health is bad and as she is ninety years old, medication cannot be pushed.

Case 4. Mr. P.—Suffered severely from tic douloureaux, especially of the ophthalmic branch. His eye was very painful and watered during the attacks. He had taken acetanilid preparations until he was nearly poisoned, and had a peripheral operation performed with only temporary relief. He lived in a malarial district and has had many chills, and his brother says he also suffered from tic douloureaux. This was in October, 1907. He was put on sodium salicylate and quinine, and then quinine alone. In January, 1908, he wrote that he had gotten entirely well. In March, 1909, he was having chills and the pain returned. He came to Richmond and was relieved of pain in two or three days with quinine in large doses and moderate doses of novaspirin.

Case 5. Mrs. W.—Gave a history of neuralgia and rheumatism and lived in a malarial district. She suffered from trifacial neuralgia for fifteen years. Her pain became worse and she then suffered from attacks of tic douloureaux every twenty minutes. Her attacks were also accompanied by pain in the dural distribution of the fifth nerve. This was in October, 1908. She was put on quinine and sodium

salicylate in heavy doses. In March, 1909, the physician who referred her tells me she has remained perfectly well since a few days after treatment was instituted.

Case 6. Mrs. D.—Gave a history of both malaria and rheumatism and suffered from tic douloureaux off and on for seven years. Pain was chiefly in the superior maxillary branch She was given quinine in small doses and sodium salicylate in heavy doses. Two weeks afterwards she left entirely free of pain. A letter April 8th, 1909, says she has had no severe attacks since taking treatment in March, 1908.

Case 7. Mrs. H.—Had facial neuralgia for eighteen years, accompanied by tic of the right cheek and right side of the forehead. A year before she suffered with sciatica. Her urine was loaded with urates. Because of a complicating condition no quinine could be given and sodium salicylate only in moderate doses. April 14, 1909, writes she only has rare attacks with less pain which medicine controls.

Case 8. Mrs. B—Gave no history of malaria but gave a history of rheumatism past and present. She was seen April 9, 1908. Her attacks were infrequent, but the pain excruciating and lasting a few hours. It was chiefly in the supra-orbital region, though sometimes in the face. She was put on heavy doses of salicylate and small tonic doses of quinine. Her pain was relieved for five or six months and since has not been seen.

Case 9. Mr. M.—Lived in a malarial district. Gave a history of slight rheumatism and has had tic douloureux for eight months. Opium and codein failed to relieve. The pain was relieved in twenty-four hours with quinine and sodium salicylate in heavy doses. This was in May, 1908. He has had several returns of pain which were greatly benefitted by the same treatment. He has been able to return to work and only has some pain on left side of the nose which at times is severe.

Case 10. Mrs. S. P.—Gave a history of both malaria and rheumatism. For seven or eight years he had severe tic douloureaux in ophthalmic and superior maxillary branches of the fifth nerve. He has taken whiskey in excess to drown it and says that he would rather die than have the pain. He was put on sodium salicylate and quinine June 4, 1908, and was relieved in a few days. On July 22, 1908, he wrote that he was free from pain until a few days preceding, when he caught cold. He recently developed an abscess of the jaw with return of pain and has been advised to come to Richmond for surgical attention. April 15, 1909, has pain in upper jaw at point of necrosis, but none in the branches of the nerve.

Case 11. Mrs. S.—An old lady of 72 years, who gave a history of chronic rheumatism and who was very nervous, was seen in June, 1908. She had severe tic douloureux chiefly in the superior and inferior maxillary branches of the fifth nerve. Her digestion was very poor and she had taken opium products for the pain to excess for years. She was put on small doses of sodium salicylate. This at first much decreased her pain, but after a few days she could not retain any medication and the pain became bad again. In September, I asked Dr. Murat Willis to inject alcohol into the nerve, which he did in the peripheral branches at their exit through the facial bones. This relieved her entirely for three months. In February, 1909, the pain had returned and alcohol was again injected. She remains free from pain to the present time.

Case 12. Miss S. Age 51. Had neuralgia in the face since fifteen years of age. This condition has become worse in recent years, and codein, patent medicines, etc., have failed to relieve her. The tic douloureux involves all three sensory branches of the nerve. Her teeth were extracted but no relief experienced. She gave a history of chronic rheumatism. She was seen in August, 1908, and put on heavy doses of sodium salicylate and small doses of quinine. This relieved the pain in a few days, but she was unable to continue the salicylate on account of vomiting, except in small doses. In reply to a letter inquiring as to her condition at present, she writes April 14, 1909, there is no trifacial pain but has pain in ear and neck.

Case 13. Mrs. R. A. R. Age 55. Had been a sufferer for three months with severe tic douloureux of the right side, chiefly in the ophthalmic branch of the fifth nerve. She was seen in October, 1908, and gave a history of chronic rheumatism. She was extremely pale and anemic and suffered with coccygodynia in addition to her trifacial pain. She gave rather indefinite history of previous malaria. As the salicylate had failed to relieve her in her pre-

vious treatment, she was put on iron, quinine and strychnine and given monobromate of camphor suppositories, each four grains. In a few days she was relieved of both pains and has remained cured of her tic douloureux.

From a study of these cases the following conclusions have been reached:

First—That malaria and rheumatism have been prominent factors in causing tic douloureaux in these cases. Eight of thirteen cases gave definite history of rheumatism alone and two of these lived in a malarial district but gave no history of malaria. Three gave definite history of both rheumatism and malaria. One gave a history of malaria alone and the plasmodium was found in his blood. One gave no history of definite malaria or rheumatism but lived in a malarial district and was cured by quinine alone. One of the cases gave a history of past rheumatism (case 13) but was very anemic and was cured by iron, quinine and strychnine.

Second—That in these cases sodium salicylate proved of marked benefit in the rheumatic cases and quinine in the malarial cases, and further, that to get the result these drugs must be pushed to the limit of tolerance.

Third—That in these cases the effect of treatment is enhanced by rest in bed for a week, purgation, and a nourishing but not over rich diet.

Fourth—That as a general conclusion, in the writer's opinion, medical means should first be tried, then alcohol injections; if these are not effective, then the peripheral operation performed. If relief is not then obtained, the serious Gasserian ganglion operation may be performed as a last resort. This is because of its immediate danger, because it substitutes anesthesia for pain and because of the panophthalmia and other trophic disturbances which sometimes follow the operation.

A CASE OF INFECTION BY ANTITOXIN.

By RICHARD MASON, M. D., The Plains, Va.

A little girl, nine years of age, who had been exposed to diphtheria in an adjoining neighborhood, where it was epidemic, returned home, and in a few days developed a sore throat. On examination, a typical membrane the size of a quarter of a dollar was seen on the posterior wall of the pharynx. Temperature was 101, pulse 110, and other general symptoms of a mild case of diphtheria. With the parents' consent, I injected 2,000 units of Mulford's antitoxin.

The following morning a messenger came for me early, reporting the child "paralyzed and unable to move hand or foot." I found her with flushed face, bounding pulse, temperature 103, and crying out with pain whenever any attempt was made to move her in bed. At the site of the injection (just below the inferior angle of the scapula) was an inflamed area, six inches square, swollen, red and angry-looking, as if an abscess were about to develop. Realizing that I now had a case of acute infection to deal with, I treated it as such, and the symptoms gradually subsided in the course of a week, without going on to actual suppuration, the diphtheritic symptoms also gradually disappearing.

Now, let me ask a few questions about antitoxin: The most enthusiastic advocates of the treatment advise administering it early, and without waiting for bacteriological confirmation, in all cases of suspicious sore throat. Are not all cases of sore throat in children suspicious? And would not the great majority of these sore throats recover without antitoxin? Certainly we can never be positive from clinical symptoms alone, that any case of sore throat in a child under ten years old is not diphtheritic; and to wait for the bacteriologist to examine and report means several days' delay, especially to those of us who practice in the country. Then, too, the bacteriologists tell us of the pseudo-bacillus, a harmless germ which so closely resembles the Klebs-Loeffler bacillus that only the expert can distinguish them; also a non-virulent diphtheria bacillus which differs from the Loeffler bacillus in no way except that it is harmless, and does not produce the disease. Both these germs may be found in the throats of persons not suffering with diphtheria. And Holt tells us that even the virulent Loeffler bacillus is sometimes found "harboured for an indefinite period in the throat of a healthy person." He also describes pseudo-diphtheria, a membranous inflammation of the throat caused, not by the Klebs-Loeffler bacillus, but

by the streptococcus pyogenes, or, occasionally the staphylococcus.

But to go back to antitoxin again: Why do we usually get negative results from it if not given till after the disease is fully developed? If the theory that an antitoxin is being manufactured in the system of the patient all during the progress of the disease is correct, should not antitoxin injected, have at least some effect in counteracting the toxins at any stage of the disease? I am aware that there are statistics mountain-high making evidence overwhelming in favor of the serum treatment of diphtheria, but is not much of this evidence obtained from statistics made by the enthusiast who administers antitoxin in all cases of "suspicious sore throat"? Then he makes an entry of it in his case-book, and in a short time is able to make some such report as follows: "844 cases treated by antitoxin with a mortality of only 11 per cent." A remarkably low death rate, indeed, for diphtheria, but 844 cases of what? One can readily see how misleading statistics compiled in this way may be, as to the value of the antitoxin treatment in true diphtheria.

I have asked these questions, hoping that some one better informed on the subject may take it up and discuss it. And I report the above case because I think, in justice not only to the public and the profession, but to the manufacturers themselves, every such case should be reported.

THE UP-BRINGING OF AMERICAN CHILDREN IS A FACTOR IN THE COMPARATIVE RARITY OF PSYCHASTHENIA AMONG THEM.

By TOM A. WILLIAMS, M. B., CM., (Edin), Washington, D. C.

Although little unconscious habit-spasms, especially among women, will strike the eye of a curious observer in the street cars of American cities, yet such little tricks of manner as tilting the hat, twitching the nose, wrinkling the forehead, placing the hand up to the hair, hardly constitute an organized tic, as defined by Brissaud (*Lecons sur les Maladies Nerveuses*); for this is always preceded by an intense desire to perform the morbid act, and followed by relief when it is accomplished. It is in reality then a morbid impulsion, although Janet (*Les Obsessions et la Psychasthenie*) is unwilling to classify it in that category, as usually constituted. Now, the little tricks of which I speak are easily got rid of, and entail no suffering in so doing; while a tiquer to get rid of his habit (see Williams, "Tics and Spasms," *Va. Med. Semi-Monthly,* Oct. 9, 1908), requires tremendous effort of volition, and experiences much suffering. Tic also is somewhat rare in the clinics, and the question arises whether this is not due to the habits and up-bringing of the American.

Authorities are now agreed that tic is one of the stigmata of the constitution, termed by Janet as psychasthenic, and formerly described by Magnan (*Les Degeneres*) as degenerate. It differs only in form from the more purely intellectual and emotional manifestations of this psychosis. The content of the psychological process which manifests itself motorially as a tic scarcely differs from those which eventuate in obsessions or phobias, where the intellectual and emotional factors predominate respectively.* Each is characterized by a recurrent non-volitional, ill-regulated, often absurd, non-productive, sterile tendency to act, to think, or feel, ill adapted to, or even quite at variance with, the course of the environment of the time being, though once related usefully to a former obsolete environment, ontological or phylogenetic.

It is the product of the state of mind which eventuates in the undecided character, the vascillating man, the doubter, the individual who cannot make up his mind.

This state is encouraged by an up-bringing which fosters distrust of self, respect for and dependence upon the will of one's elders as such, the habit of self distrust because we are ourselves, whether on account of being young, religiously unworthy, ignorant or what not, as compared with an ideal one's parent may or may not possess.

Now, no one can accuse the up-bringing of the American child of fostering such a disposition. It, on the contrary, induces self-confidence, precipitate judgment; in fact, the very lack of that constraint, the excess of which produces the self-doubter. It seems probable,

*Williams—Importance of Distinguishing Among the Psychoneuroses, Jour. Abn. Psy. '09, March; also Dif. Diag. Neurasthenia from affections often mistaken for it., Arch. of Diagnosis, N. Y., 1909, Jan.

therefore, that it is the fashion of up-bringing which renders comparatively uncommon the subject of tic among the Americans as a whole. The tendency of the up-bringing is rather towards that facility of judgment and rapidity of decision which is very apt to be easily victimized by the suggestions of others, and to eventuate individually, into hysteria,* and in the mass, into wild crowd-movements.

To this latter consideration the New England States form a marked exception; and the explanation is not far to seek in the self-restraint and powerful inhibitions of emotion entailed by the puritanical up-bringing which still largely obtains in that section of the country.

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*See Williams, "The trend of the Clinicians concept of Hysteria." Bost. Med. and Surg. Jour. March 5, 1909.

Editorial.

Repeal State License Tax on Doctors.

In some notes made in our last issue on this subject, we pointed out some considerations why the reputable medical profession has a claim for being placed in that list of professions or business that should not be oppressed by *special license* taxes.

But some objecting clap-trap politicians undertake to say that the State of Virginia cannot afford to relinquish the less than $40,000 income from such taxes. If possibly in bygone years the poverty of the State prevented relinquishment of any part of its income, that condition does not now exist. The financial recuperation of Virginia has been wonderful, and this Commonwealth now stands well up in the list of the more prosperous of the country. Farming interests have been greatly increased—thus advancing the value of lands. Manufacturing industries of nearly every kind have rapidly multiplied. Railroads are permeating all parts of the territory. Business enterprises of various kinds are being established all over the State. Few States of like population have so vast a banking system, with annual reports so satisfactory. Agencies of the largest corporations of the country are constantly being increased in number throughout Virginia. In short, Virginia has rapidly grown in taxable values from properties, business enterprises, etc. So, that, from a financial point of view, this State is fully able to make those concessions to rightful claims for release from license taxes that have long since been accorded by nearly every other State of this Union. Hence all of the talk of politicians as to the monetary inability of Virginia to relinquish the *special license* taxes on doctors is simply an excuse for their unwillingness to be informed on the subject.

There are a number of doctors in Virginia who are not called on to pay State license taxes—such as those in charge of State hospitals, chief surgeons of railroads, medical examiners of life insurance companies, officials of State and local boards of health, so long as they confine themselves to their legitimate fields. Internes in hospitals, purely laboratory workers, coroners, etc., are all exempt. In many instances, the parties are men of influence, and we earnestly bespeak their help in the proper education of their prospective legislators in the General Assembly of Virginia, 1910.

Intimations have come to our hearing that certain health officials will openly or quietly oppose the repeal bill. The present State Board and many of the local health boards have done magnificent work during the past year or so. To make their departments so efficient, these Boards are peculiarly dependent upon the help of the profession of the State or communities, as the case may be. It would be so gravely impolitic for such officials to oppose the now loud and wide cry of doctors for release of license taxes, that it would be a reflection on their good judgment to even sanction opposition.

On the contrary, we have the strongest kinds of assurance that such officials will lend their earnest, active help to have the repeal bill become a success during the next session of the Legislature. There is no antagonism between the interests of these Boards of Health and the common wish of the profession of this State. They will work together in the common cause. In keeping with the aspirations of the profession to do good, to prevent the outbreaks of epidemics, etc., it will work mutually with official boards of health—each community of doctors striving to improve the health record of their sections.

The amount of money saved to the State by such co-operative work of officials and the medical profession is hard to be calculated. It is safe to estimate that the illness from a preventable disease of only one member of the family of a wage-earner is an annual loss of not less than $400. It may be that the head of the family himself or herself has to stay at home to be nurse, etc. So that if the combined efforts of physicians and health boards prevented the illnesses of only 2,500 in the State, that would be a saving of $1,000,000. But such is so small an estimate as not to accord with the real facts, if they are ever obtainable. It is more probable that several millions of dollars a year are saved to the State of Virginia by the good offices of the medical profession. And yet, in consideration of such saving, can it be true that any General Assembly of Virginia, when informed as to such matters, will longer impose an unjust, ungenerous *special license* tax on reputable physicians of any school of practice? It can simply be due to want of information that has so long led the Legislature not to relieve the oppression.

It is incomprehensible why the Virginia Legislature should have lagged so far behind other States in adopting a measure that has all to commend it, and nothing against it. Because there may be a few disreputable doctors who do disreputable things, such a fact should not be used as an argument against the measure—any more than the acts of a disreputable judge should affect the high calling of the bench as a class; or a disreputable minister affect the interests of the Church. Like the temperance wave now rolling over the country, the matter of the repeal bill in Virginia cannot be "downed" until something satisfactory is accomplished.

Neither threats nor intimidations of Legislators should be countenanced; but conscientious convictions as to what is right in the premises should be urged. There is work for every Virginia doctor to do, and that lies in the line of properly informing his prospective legislators.

Other rightful claims on the State treasury may be urged by wily politicians in order to lay aside the repeal bill. But a proper presentation of the cause, even to these politicians, will lead them to give the desired relief. Why should the medical profession be made longer to so peculiarly endure and bear the expense of *public health reforms?*

Nothing that we have said can be construed as offering protection to quacks, charlatans, nostrum vendors, and the like. Their purpose is solely money-making out of a too credulous people, without concern as to results. Their trades are ignominous as compared with the practice of the reputable doctor, and should be heavily taxed, if they cannot otherwise be removed.

Representation in the American Medical Association.

According to a By-Law of the American Medical Association, a representative of a State Medical Society or Association, in affiliation with it, must have been a member of the National Association for at least two years before he can be recognized as a member of its House of Delegates. This House of Delegates transacts all the business of the A. M. A., and there is practically no appeal from its decisions. Whether for good or evil, the profession of the country must obey its rulings. This House of Delegates is made up of a delegate from each State Medical Association or Society in the proportion of one for each 750 members or fraction thereof. Thus, the Medical Society of Virginia, with its *more than* 1,500 members, is entitled to *three members* in the House of Delegates.

During the last session of this State Society, a member of distinction was elected as one of its three Delegates. This party has been an earnest, faithful working member of his State Society for the past twenty or more years. For some years, also, he was a member of the A. M. A., but allowed his name to be dropped from its register two or three years ago. About a year ago he rejoined the Association, and has retained his membership ever since. His total period of membership extended over several years, but not consecutively for the past two years, as above pointed out. Just this, and nothing more, debars him from representing the Medical Society of Virginia in the House of Delegates of the A. M. A.

The question naturally arises here, has the A. M. A. the right to dictate to its component or affiliating State societies who shall or shall

not be *their* representatives, provided the parties are reputable, and without intimation of professional misconduct, and are members of the A. M. A. at the time of their elections? Is it the intention of the A. M. A. to prevent a State Society to select its own representative? If such is the intention, then the House of Delegates declares itself as *not* composed of representatives from State Associations, according to their quasi rights of selection.

What does all of this amount to? During the vacation of the State Society it practically devolves on one man—the Chairman of the Executive Council of the Society—to act for the entire body. Fortunately, this official of the Medical Society of Virginia this year is beyond all suspicion as to his motives or manner of selecting a substitute; but in filling the vacancy of such an important and responsible a position he has felt embarrassed and reluctant in acting for the whole body of over 1,500 members without opportunity for consultations as to whom he should appoint. It might be that the party thus appointed is not as familiar with the wants or wishes of the State Society as the one chosen in open session of the same; and thus the State Society might not be as well represented. These remarks have no personal construction or implication.

All of this awakens the question as to the value of membership in the A.M.A., if a party who has not been a member for two *consecutive* years is not eligible to membership in its House of Delegates? If it were a question of representation of the A. M. A. itself, then possibly it would be better to select some one who has been a member for a *consecutive* period of years. But a State society elects one of its representative members for membership in the House of Delegates, and as such, he should be recognized, at least, in courtesy to one of the component bodies of the A. M. A.

As to ordinary membership of the A. M. A., there do not appear to be many advantages. In the general meetings, a member has no voice in anything that pertains to the general welfare of the profession. These meetings, as also the section meetings, are open to anyone who may choose to attend whether he be a member of the Association or not. Members and non-members alike have to pay the same price for the Journal of the A. M. A., as also for the American Medical Directory, and other publications. So that it is only through its House of Delegates that anything can be accomplished looking to the welfare of the profession at large; and when a component State Medical Society or Association is debarred the privilege of sending its own selected representative, how can it be said to be properly represented.

We will not further argue the question, but hope that the hints thrown out will lead to a prompt rescinding of the By-Law referred to.

There are already many in the profession who scarcely regard it a special honor to be chosen as a member of the House of Delegates of the American Medical Association. Parties elected often accept the position against their wish—knowing full well in advance that the faithful performance of duties in the House of Delegates will prevent them from participation in the proceedings of scientific sections, which they would prefer to attend. They accept the position for the most part in deference to the importunities of the several State societies. So that, if these societies are denied the right to make their own choices as to their representatives, sooner or later the House of Delegates will degenerate into a body of haphazard selected men—men who are not truly representative of anything except that of their own personal vanities, to be published in their home newspapers to catch the public eye.

Lengthy Society Papers.

We are more and more satisfied that many of the good, suggestive points made in certain papers contributed to medical societies—and even original contributions for journals—are lost for a long while to the profession simply because of the length of the papers. Authors oftentimes try to bring out too much at one time. To impress a single point or two at a time is generally sufficient for one occasion. But, instead, contributors too often have an idea that they must repeat in detail every step taken by former advanced writers in order to lead up to the chief point of their own writing. Ordinarily, they can summarize in a few sentences the observations and conclusions of others, which would bring them up to the essential point of their own papers.

A State or a National medical society session possesses more or less the qualities of a social gathering, as well as one intended for scientific study. And when some of the audience sees one rising to read a voluminous manuscript, they naturally "square" themselves out for an easy time, and begin undertone conversations with their neighbors; or else they retire to ante-room to walk about until that reader is done. The same thing practically occurs with the reader of medical journals. As he thumbs them, and notes the long articles—articles long enough, in some cases, to be treatises—he lays them aside "for a more convenient time," which rarely comes. But the short, pithy articles that he sees, which will occupy him only a few minutes, he generally reads and gathers from them food for thought. In the long experience of the editor of this journal, the above statement appears to be wonderfully true. And why authors in general—whether of papers intended for societies or for journal columns—do not take advantage of this knowledge, is surprising. If they have in hand a subject of many points, let them so divide up their papers into several contributions—each with a distinctive heading; and they will soon learn for themselves how much more generally their contributions are read, or attentively listened to by attendants on society sessions.

Dr. McCormack's Lecture Tour of Virginia.

During the latter part of March, Dr. J. N. McCormack, of Bowling Green, Ky., representing the American Medical Association, made a lecture tour of Virginia, speaking to good audiences in most of the cities. He was accompanied in his rounds by Dr. Ennion G. Williams, of Richmond, Health Commissioner of Virginia, Dr. George A. Stover, of South Boston, Va., Chairman of the Legislative Committee of the Medical Society of Virginia, and Dr. H. S. MacLean, of Richmond, member of the same committee. Everywhere Dr. McCormack left good impression. Dr. Williams, as opportunities offered, well presented the claims of the State Board of Health upon the attention of the people and profession, showing its dependence for good work upon the help of practitioners of medicine, whom, he claimed, should be exempted from State license taxes, helping, as they do, in preventive medicine. Drs. Stover and MacLean more strictly confined their limited remarks to the rightful claim of the medical profession for exemption from State *special license* taxes. It is to be hoped that good seed were sown in good soil.

The Association of Surgeons of the N. & W. Railway

Will hold its second annual meeting in Cincinnati, Ohio, May 4th, with headquarters at Hotel Sinton. Members who fail to attend will miss, besides an attractive scientific program, what is described by the Secretary, Dr. T. M. Baird, of Crewe, Va., as a most enjoyable meeting socially. Dr. Joseph A. Gale, of Roanoke, Va., is President of the association.

The American Medical Association.

The sixtieth annual session of the American Medical Association will be held at Atlantic City, N. J., June 8-11, 1908. The House of Delegates of the Association will convene June 17th, the day preceding the beginning of the general or scientific meetings. There are three delegates from the Medical Society of Virginia.

The Piedmont Medical Society

Held its last regular meeting at Orange, Va., April 17th. The subject for general discussion was "Intestinal Perforations in Typhoid Fever," Dr. C. C. Tennant, of Charlottesville, being leader. Dr. Lewis Holladay, of Orange, is secretary of this society.

The Northern Neck Medical Association

Will hold its next session at Warsaw, Va., April 29th. Dr. Robert O. Lyell is Secretary.

Free sample of new Patent Two-Finger Obstetrical Examination Cot will be sent to physicians sending card or prescription blank. Other novelties. Address Medical Equipment Company, 149 West 23d Street, New York.

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PERSONAL EXPERIENCES IN PROSTATIC SURGERY.*

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It is so frequently the case that we, members of different medical societies, hear papers upon the observations deduced from the consecutive outcome of 500 cases of appendicitis, or 700 or 1,000 cases of hysterectomy or some other operation, that the operator whose opportunities along special lines has not been of such numerical dimensions, feels a hesitancy in asking the attention of a medical body to review the outcome of a few cases only; and further feels that he would much rather wait, even if it is a considerable time, until his numbers, too, became possibly a little more hypertrophied, in order that the experience gained from these more frequent operations might prove of greater clinical value; the observations and conclusions obtained from their outcome of some solid surgical significance, and that the carefully followed results accurately recorded and fearlessly set forth would then be of not only greater interest, worth and benefit to himself, but, doubtless, also to the medical fraternity. Since, however, the call of the committee has gone forth, the writer presents to your attention tonight, the result in twenty-six instances of prostatectomy and the personal observations derived from this rather limited series of cases.

Of these twenty-six cases, nine were negroes and seventeen white. I recall some ten years ago having heard one of the most prominsurgeons of his day, one of those peerless pioneers, say that he did not believe the negro was subject to enlargement of the prostate. The opportunities of the present day for greater clinical work, the development of different and distinct regional specialties, the perfecting of technique and, *pari passu,* a lessened mortality, and, consequently, a greater confidence in surgery on the part of the public, now bring to the knife of the specialist cases which, formerly, would have escaped unobserved or undiagnosed; or, having submitted to an operation, could scarcely have expected to have gotten the results which the contributing operators of the present day give forth to the many medical journals. But these same pioneers moved without trepidation or hesitancy, their thirsting forces into the unknown depths of the pathological forests blazed their way over seemingly unsurmountable public prejudices, threw pontoon bridges of antiseptic dressings over swollen lymphatic streams and felled with crude knives gangrenous members which threatened life and limb. But for their heroic leadership and courage, surgery would not have appreciably advanced within the last half-century.

In this series of twenty-six cases there were three deaths, or about eleven per cent. Cases 3, 7 and 24 died.

Case No. 3, colored, perineal, died of pulmonary embolism on the second day after operation, confirmed by autopsy.

Case No. 7, white, suprabubic, died of ileus on the fifth day after operation, which the writer believes to have been due to too generous doses of sparteine sulphate which were falsely given to stimulate congested kidneys; this error has not been performed since.

Case No. 24, white, aged seventy-nine; suprapubic cystostomy was performed for enlarged prostate. The prostate was never attacked, simply drainage instituted; but the old man gradually lost ground, and refusing nourishment, died of inanition about ten days after operation.

In looking over the ages, I find they range from fifty-three to seventy-nine. The occupa-

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tions in seventy-five per cent. were farmers, the remainder were constituted by mechanics, laborers, etc. Nor could the writer bring to bear any venereal history which would seem to be of significance or pertinent to hypertrophy of the prostate.

Diagnosis should be easily completed. According to Thompson, thirty-three per cent. of all men over sixty have enlarged prostate, and sixteen per cent. of this number seek surgical interference. The frequent urination of prostatic enlargement is essentially nocturnal, as opposed to the diurnal polykiuria of stricture, or contracture of the neck of the bladder. This is directly traceable to the actual massage the prostate gets during the day by the encircling fibres of the levator ani, the periprostatic plexus of veins which run in the substance of the sheath having its contents hurried along and emptied in the physiological act of walking by this muscular activity. At rest, during the night, this action ceases; pericongestion means central congestion, and the demands for evacuation are consequently greater.

Frequent urination is not the factor which attracts the patient's attention to himself. He thinks this to be one of the concommitant phenomena of advancing years, as much as gray hair and wearing of spectacles, and pays but little attention to it. It is *painful urination* or *hematuria;* whether, in turn, this be caused by stone-formation, infection, varices or great distension, makes no difference. One of these two factors carries the unfortunate prostatic to surgical help.

The degree of retention, urinary phenomena and physical embarassment are not dependent upon the size of the prostatic hypertrophy, but upon the angulation of the prostatic urethra or degree of closure of the vesical sphincter. This latter is directly dependent upon pedunculated intravesical overgrowths. The finger in the rectum may find no enlargement, the catheter reaches the bladder easily, and yet the gateway is obstinately plugged. The writer would call attention to specimen No. 1 as an instance of the intravesical prostatic overgrowth which was removed by suprapubic cystotomy.

A tumor grows in the line of least resistance. Prevented anteriorly and inferiorly from spreading out, the prostate grows in the course of its hypertrophy upwards and backwards; the neck of the bladder is raised. This means the formation of a pool below the level of the neck. With replacement fibrosis or eccentric dilatation, this pool is never emptied. The opportunities for infection and stone formation are, therefore, greatly encouraged, and with the development of these complications, the patient now gets disturbed about himself and comes for examination.

There are many classifications and divisions of the degrees of prostatic hypertrophy. The writer had the opportunity before the Medical Society of Virginia, in 1907, to make the following classification:

I. Enlarged prostate characterized by moderate frequency of urination. *Examination.* Bladder healthy; residual, two ounces or less and clear; organs normal; health good; patient does not know he has it.

II. Enlarged prostate characterized by "catheter life" or overflow. *Examination.* Bladder tired out and infected. Residual, large amount and nasty; kidneys and heart compensating; able to attend to work.

III. Enlarged prostate, really Class II plus infection (general and local). *Examination*: Kidneys and heart not compensating; urosepsis; uremia; delirium.

Those cases in Class II constitute the larger percentage of the instances which the surgeon sees. We but rarely see those in Class I for they are like the boy who swallowed the nickel, —they have got it, and don't know they've got it.

Class II is also essentially the class for operation. They cannot be convinced in Class I that surgical procedures are justifiable; and in Class III the urosepsis and systemic infection are so profound that operation must be attended with a large mortality.

The writer would call attention to the prostatic pouch as a reservoir for urine, which, at times, is misleading. This pouch is the dilated prostatic urethra bounded anteriorly by the triangular ligament and posteriorly by the pedunculated, ball-valve, intravesical growth. The catheter inserted, now draws off two or more drams of urine which has collected there, by trickling around the ball, and retained by the external cut-off muscle deceives the surgeon as to the actual length of the urethra. The ball-valve must be passed before the bladder is reached, when a generous gush of urine signal-

izes the cavity proper. Further, about the diagnosis: There is only one more condition which can be justifiably confounded with prostatic enlargement—"contracture of the neck of the bladder." This is an actual stenosis by fibrous tissue following a previous gonorrheal invasion. The retention, the overflow, the frequent demands, keenly simulate prostatic obstruction. The younger the age of the patient, the previous history, rectal examination and insertion of a goodly sized sound which gains the bladder with difficulty, if at all, settle the question. The writer had recently an illustration of this condition under his observation. Perineal section, stellate rupture of the stenosed ring (which would not admit a No. 12 F.) by means of uterine dilators, dilatation to 45 F. by Kollman's dilator, insertion of a large perineal tube and usual after-treatment were followed by most gratifying and durable results. Large sounds must be passed at regular intervals to maintain this patency.

Just here, the writer would call attention to the following personal observations which are—that contracture of the neck of the bladder occurs more frequently than is supposed, and that the sound inserted for deep dilatation never gains the bladder cavity; and, therefore, does not dilate the internal sphincter; that the stenosis is shoved on ahead of the sound which is not sent home, the operator is deceived, the condition is not relieved, and the patient ultimately comes to the operating table seeking permanent relief.

Along with this series of cases also, there were three cases of cancer of the prostate which proved inoperable. In the early stages of cancer, the stony hardness, immobility and glandular involvement point to the condition, and, later, these same epiphenomena and particularly the doing-away with the sulcus posteriorly stamp the disease as malignant and beyond surgical relief. The writer would call attention to a case of cancer of the floor of the bladder. A suprapubic cystostomy was performed; a tumor the size of a child's fist was removed, the base seared, and for five weeks, every other day, the X-ray was applied through the bladder wound upon the stump by Piffard's protecting tube. Dr. Gray then considered the patient sufficiently progressed to allow him to leave the hospital. This operation was performed January 5, 1906. The old gentleman gained rapidly in weight and strength, and is today about his parochial vineyard. A letter dated April 9, 1909, says, "My general health is good, but I have been troubled considerably of recent by the urine being thick and bloody."

Again, cystoscopy is scientific, accurate, pretty, interesting. But the writer would forcibly condemn any instrumentation along the urinary channels of the engorged prostate except for positive diagnosis. It is in but few instances that we are unable to make a diagnosis when a rectal examination has been thoroughly carried out, the history carefully gone into and a large-size catheter inserted. Salol and urotropin, five grains each, three times daily, copious water drinking, the bowels well opened with salts, simple diet, the bladder gently and carefully irrigated with warm boric acid solution two or three times daily, a little strychnine, enforced rest for several days before operation, persuasively prepares the organs, heart, kidneys and bladder for the coming insult of the operation.

Since about 1887, when it was first appreciated and anatomically understood that the prostate could be removed, there have been many suggestions, innovations and modifications about the course of, and the best method to do away with this overgrowing, pathological hypertrophy.

It is with no fear that most surgeons will boldly enter the peritoneal cavity, and unsex a woman by removing her uterus and appendages, or uterus alone, for a poor, little, unoffending, subperitoneal or mural fibroid; and yet, when it comes to their own sex with the operation outside the peritoneal cavity, the urinary channels obstinately blocked to the passages of urine, the patient house-ridden and a source of ammonical annoyance to himself and friends, the surgeon hesitates, since the operation, though not attended with any unusual risk, "emasculates," does away with procreative powers and, consequently, should be most cautiously considered.

Surgical measures devised for the relief of this condition have been many: Prostatic dilatation; Hawley's suggestion of doing away with the pelvic floor; Bier's iliac ligation; Helferich's resection of the vas; White's castration; Rydygier's resection; Delageniere's luxation of the prostate; Dittel's coccygectomy followed by prostatotomy; Ismardi's excision of the vas,

leaving testicles; Bottini's urethral cauterization; Chetwood's perineal cauterization; transvesical prostatotomy; suprapubic and perineal prostatectomy are some of the most important. It is Mr. Freyer, of London, who, having for many years operated at St. Peter's Hospital for stone, now leads the suprapubic school and advocates that method for the radical attack on the prostate. The mortality gathered from the many operators who remove the prostate by this route is about eleven per cent.

Having had the opportunity to observe the operation of Mr. Freyer, and also Mr. Harrison and Mr. Pardoe, fresh from their teaching, the writer attacked his first nine cases by the suprapubic method. Of these, one was lost,—case No. 7. After that, the writer had the opportunity, for the first time, to witness prostatic surgery by some of the more eminent American operators. Convinced that this is essentially the method of choice, in the last seventeen cases the writer has performed this operation alone. As is the danger to the peritoneal cavity in the suprapubic method, so is the danger to the rectum in the perineal method. By Freyer's method, the resulting blood-clot in the sheath, caused by the suprapubic removal en masse, is not touched; a large drainage tube is inserted and the usual after-treatment is carried out.

By Bryson's suprapubic method, the wound is packed with vaseline and iodoform gauze. His results have been most encouraging, he claiming that impotence, urinary fistulæ and incontinence are not so frequent as by the perineal route. This operation, however, is primarily contraindicated in very fat persons and in contracted bladders.

The writer has had no absolutely satisfactory syphonage of the bladder after the suprapubic removal, the constant leakage and excoriation of the skin being sources of considerable discomfort to the patient.

By the perineal route, the mortality at the hands of the various operators is five and one-half per cent., or one-half that of the suprapubic. The operation is extra-peritoneal, and in a field where nature has been peculiarly generous in her blood supply. This means an early union and a quicker repair.

It does not seem to be thoroughly understood how the prostate can be removed from around the urethra without injuring that tube. The writer would liken it to a tunnel, with its appropriate masonry, going through a mountain; the mountain might be removed and still leave the tunnel with its masonry. The trouble is, however, that the line of cleavage is not accurately determined, and in the haste of the operation the mountain, tunnel and all are taken away. The hull is left—it is extraperitoneal, it is outside the bladder—the floor of the bladder has not been injured or torn, union is happy and results are good. By the suprapubic route, the hole left behind must permit of leakage and extravasation with consequent chances of infection.

The writer believes that the inverted-Y, starting well anteriorly with the divergent branches on either side of the anus posteriorly, is the incision of choice. It is carried down upon the bulb which is now better dissected and turned to one side than incised, as it bleeds freely and, at times, obscures the field.

Another point: The entire arterial supply of the perineum comes from the internal pudic, which, escaping from the greater sacro-sciatic notch, runs back into the lesser and hugs the inner margin of the tuberosity under cover of the falciform process of the great sacro-sciatic ligament. It now breaks into several divisions, and running centrally, spreads out upon the perineum. This artery being cut, has retracted deeply and more than once caused serious and fatal hemorrhage. The writer would call attention to its anatomical location. Pressure firmly applied to the inner surface of the tuber ischii must control this hemorrhage, as it crushes the artery against its bony background.

The incision in the membranous urethra allows Young's retractor to be slipped into the bladder and the prostate pulled down toward the operator but still covered by the muscles and fascia. It is the posterior layer of the levator and, which, converging around the anterior margin of the rectum, splits again and encircles the prostate. These fibres are the recto-urethralis muscle and must be severed at right angles between the rectum behind and the prostate in front to allow the gland to be pulled into view. A large, flat retractor is put in the wound and shoves back against the sacrum the anterior wall of the rectum. This is the key note to the operation. The levator ani is now stripped back from the median line to either side, the retractor pulled down upon, not using

it as a lever against the under surface of the pubes to force the prostate into view, but by firm, gentle traction downwards. With gauze, the surrounding vessels and small structures are stripped back and the sheath formed by the recto-vesical fascia is incised in the middle line, the finger inserted between it and the capsule, and the glans is ready for partial or total enucleation.

We have already mentioned that the periprostatic plexus of veins runs in the sheath laterally and mesially. Few veins are found inferiorly. The sheath, then, may be incised in the middle line, stripped from the capsule and, carrying with it the veins, there is no trouble about any great hemorrhage for they are still left behind intact. A large perineal tube, No. 28 F., is inserted in the membranous urethra, the bladder irrigated with a cherry-red iodine solution, the wound sewed in layers, a small strip of one-fourth inch gauze brought up on either side for the escaping serum and drainage, the skin sewed together tightly and the patient returned to bed.

In criticizing the operation as now performed in most of the hospitals, the writer would call attention to the fact of insufficient preparation for the operation. When we recall that the back pressure which has been maintained for so many years, is suddenly removed, the necessary hyperemia and congestion which follow the relief of this mechanical obstruction do not allow of the functional capacity of the organs involved. For this reason, drugs are used to stimulate these congested organs. The writer does not believe that this is based upon the best therapeutic principles. If before the operation the alimentary canal is emptied of its contents, the kidneys helped to activity by drinking large quantities of water, following the operation *staungs niere* will be temporary, for they will take up their duties as soon as they can if left alone and are not goaded to desperation by the unnecessary use of stimulants.

The writer has had in this series, three cases of cancer of the prostate which have been denied operation. Starting centrally, cancer manifests itself only when it has gained sufficient size to obstruct the normal outflow of urine. It is then that it can be felt, per rectum, to be hard, that the gland is slightly, if at all, movable, asymmetrically enlarged and the finger swept up about the internal ring and the concavity of the serum, may already notice metastatic enlargement there. As in the operation of pan-hysterectomy, where the lumbar, retroperitoneal and iliac glands must be thoroughly removed from beneath the peritoneum which is stripped up, so in its analogue, cancer of the prostate, the operation without removal of the enlarged glands is palliative only, and cannot prolong life for any great length of time. Again, when springing peripherally, it soon manifests itself by the ulcerations in the rectum and bladder. The escape of blood is large and uncontrollable. The measures now adopted are for the relief of the hemorrhage and pain, and not for the relief of the condition.

The writer has sent letters to each patient of the series, and about fifty per cent. have so far replied. One says that he still has some leakage through the perineum. This particular operation was performed seventeen months ago. Two say they have to get up at night to urinate. In no instance was there an injury to the rectum. One states that he has not lost his courage; one that he drips some after he passes his water. The latter was a suprapubic evacuation en masse, a thorough control of the sphincter never having been established.

In conclusion, the writer would call attention to a complete prostatectomy as a radical cure for chronic, relapsing, gonorrheal prostatitis. In this instance the young man contracted gonorrhea ten years ago. Since then, he has had innumerably outbursts characterized by severe discharge, frequent and painful urination and relapsing epididymitis or epididymo-orchitis. The prostate was moderately enlarged, boggy and painful. Massage expressed on each occasion, pus cells, gonococci and broken-down products. Sitz-tubs and rectal irrigations were religiously carried out at each eruption, until wearied with the frequency of the attacks and understanding that the source of infection was the prostate, though realizing the severity of the operation, he willingly subjected himself to any radical procedure which he thought stood a fair chance of bettering, probably curing, his trouble. On March 1st, by perineal section the prostate was most satisfactorily removed. The patient left the hospital at the end of the fifth week; the wound had entirely healed. Daily irrigations of a mild

solution of permanganate of potassium have been carried out and, at present, there is absolutely no discharge, the patient retains his urine throughout the night and from four to five hours during the day, and has already gained much in weight and spirits. The focus of the infection having been removed, the writer believes this patient to be much better off than it would have been possible ever to have accomplished by medication, instrumentation or washings.

With a greater familiarity with the anatomical relationship of the structures in the perineum, with a clear cut and well defined idea of what one is attempting to do, with the right recognition of the structures, disguised as they may be by dislodgement and maceration, the operation has been recently more shortened than formerly. Again, following the operation, we now allow the thickened, tortuous arteries, the congested kidneys, the pulmonary, cardiac and central strain of the anesthetic to gradually dwindle away by enforced rest and quietness in bed for several days; for we were formerly taught that like the old horse who once got down never to get up, the tired and shocked patient should be made to get up after the operation despite his energetic protestations of inability to do so. This certainly appears more humane and surgical.

The writer recalls one case in which the enlargement of the prostate was of such unusual dimensions that by pressing upon and distressing the obturator nerve, there was a constant, tonic spasm of the adductor muscles of the thigh. In this instance the results were very satisfactory following perineal prostectomy. In another instance of acute, gonorrheal follicular prostatitis, the prostate, as large as a lemon, so seriously embarassed urination that, by straining and pressing there was a most pronounced and disfiguring subconjunctival ecchymosis. This is the only instance of its kind the writer recalls ever having seen.

Balsam peru and castor oil, equal parts, poured into the wound is a most excellent stimulant to the tissues, is absolutely painless and possesses the added virtue of being powerfully antiseptic. The only ill effect the writer has ever seen following its use is a dermatitis which soon disappears.

The writer would conclude as follows:

I. Prepare the patient for two weeks for the surgical ordeal.

II. Perineal operation is always one of choice, except in ball-valve and horse-collar overgrowths.

III. Leaving the middle lobe carrying the ejactulatory ducts is unnecessary and may be the cause of further trouble.

IV. Wash out the bladder and kidneys with water, not with drugs.

V. Let the patient stay in bed as long as he would in other major operations.

VI. Cancer of the prostate and bladder may be attacked by the method already described, followed by the X-ray.

VII. The writer has had no experience with the Bottini, Chetwood and White operations, and, therefore, cannot speak of their value.

Fifth and Main Sts.

LARVAL TAPE-WORM IN HUMAN FLESH; OR, SPARGANUM PROLIFERUM GATESIUS (STILES).*

By H. GATES, M. D., Manatee, Fla.

Perhaps it will not be out of place for me to review a few facts from a paper I read last year before this Association. My attention was called to the condition of a patient, while making examination over his abdomen. I was treating him for diarrhea. He would have loose bowels, as he expressed it, quite often, at which times he would have very little control over them. There was no griping, pain or soreness. I afterwards found that at these times the sphincter muscle of the rectum was more or less paralyzed, which, I think, accounted for the lack of control of his bowels. For months before he died he had no control over them.

When I first examined him I noticed nodules under the skin, which had somewhat the appearance of acne, yet not showing points of congestion, as in that disease. Newly formed pimples produced itching. Some were so close to the surface that by scratching he would rupture a cyst, and worms would be squeezed out as a formless white mass. I found this not to be a formless white mass, but living worms, by placing them in a glass of water. They were free to move and assume different forms while thus suspended. Also, the glass of water magnified their size when

*Read before the Florida Medical Association, during its 36th Annual Session, held at Pensacola, April 7-9, 1909.

on opposite side of glass from the view point. By close examination I found that they were not only under the epidermis, but in the connective tissue, glands and muscles. In some portions of the body, especially in the groins, over abdomen, on left breast and back, they were in such great abundance as to make tumor formations—connecting skin and deeper structures in one mass.

His kidneys, lungs, heart and liver gave no evidence of disease while patient lived. At times his spleen would enlarge. He had no fever at any time, but the reverse; his temperature was quite often below normal. His appetite was always good; also his digestion. He had the reputation of being lazy. He lacked energy, and would become tired after little exertion. His pulse would run as high as 130 per minute, when taking exercise from walking. I noticed two years before death that he was of dull comprehension, and it was with difficulty at times that he would express his thoughts. This became more and more pronounced till after a while, familiar words and names became a blank in his memory. If you would substitute words for him he would then talk all right. It was hard for him to express himself because he could not think of words he wished to use; neither could he write it. Finally, when he would start to tell something he would stop in the middle of a sentence, look pitiful, and say, "Well well; I forgot what I was going to say. It seems that I am losing my mind. It's too bad to be this way." This condition gradually grew worse. Two months before death he could not name familiar objects of household furniture, yet he could pronounce the name after you with effort. Three or four months before death, paralysis developed on right side. Six months before death I noticed symptoms of locomotor ataxia. He lost sexual power; had no control over bowels or bladder. The patellar and cremasteric reflexes were present. He could stand steady with eyes closed. He suffered no pain, till about two weeks before death, in right arm and leg. At this time he was completely paralyzed on right side. He could not articulate a word. He would make gutteral sounds, frown and moan. When asked where hurt, would place left hand on right side. He suffered more when moved as if sore to touch. For nearly a week before death he could take neither food nor water by mouth, on account of paralysis of part, and apparently retained none that was given by rectum.

Previous to the last few days of life he had listless, blank expression, with drooping of eyelids, as in ptosis, but for three days before death the expression was changed to that of fright and alertness, with eyes wide open, and lower jaw partly dropped. He died very slowly. For more than twenty-four hours, it seemed that he could not last an hour longer. Several times those in attendance thought he was dead, when he would commence breathing again. After death the body had the appearance of one well nourished. The abdominal walls were three inches thick. One section presented the gross appearance of firm fat, as in corn fed pork. It was a mass of encysted worms; even the muscles were infiltrated with them. There were more worms than there was flesh: probably in proportion of five to two. So, that if worms had not been present he would have presented a very emaciated appearance.

His body had been packed in ice a day and night previous to *post mortem,* so that it had become frozen. When the worms were thawed and their temperature was that of the room, which was about 70 degrees, they showed signs of life by moving—showing that they retained life after having been frozen.

In June, 1908, about four months before patient died, by invitation of Hillsboro County Medical Association, I presented the patient, and gave them charge of him for treatment. Drs. McRae, Bitzer and Vincent were appointed a committee of investigation. I am indebted to Dr. E. W. Bitzer for the following, which shows that he has given the subject considerable study and time. This is a part of a paper he prepared for publication:

"SKIN AND GENERAL APPEARANCE.

"When seen about two months before death, the patient gave the impression of being well nourished and healthy, except for difficulty in walking and talking. The skin on the face, arms, and legs appeared normal. On the shoulders, chest and abdomen, (especially on the left side) were to be seen nodules, which varied in size from a pin head to a split pea, and in shape, from perfectly round to lenticular shaped bodies. Often these lesions were papu-

lar in character, but in many instances as the worm approached the surface they assumed a vesicular appearance. On opening these lesions from one to twenty worms could be obtained. In one instance a worm penetrated the skin, and was half out when found. These lesions started as an itching point, which soon developed into the characteristic lesion. The papular, or vesicular lesion, after remaining sometime, usually developed a hemorrhagic point, which gradually faded, and with it all evidence of the lesion disappeared.

"In addition to these lesions, the subcutaneous tissues of the left breast and groin were much thickened, and the skin tightly adherent to underlying structures. This thickening was present over the entire chest and abdomen to a lesser degree. The lymphatic glands of the groin were noticeably enlarged.

"ABDOMINAL AND THORACIC ORGANS.

"Aside from lack of control over the bowels, no symptoms of gastro-intestinal disease were present. This symptom, which was present early in the disease, disappeared only to return a few months before death. No symptoms or signs of heart or lung trouble were present.

"NERVOUS.

"The first peculiarity noticed in the history of the case was the extreme fatigue on slightest exertion. Lack of control over the bowels has been alluded to above as an early symptom.

"Between three and four months before death, the patient began to develop paresis on the right side. The grip of the left hand was not strong, but was far stronger than that on the right. At this time the gait was slightly ataxic, and, in addition, presented all the characteristics of that of paresis. On closing the eyes the ataxia was not increased. The patellar and cremasteric reflexes, and Babinsky's sign were present. Death was due to bulbar paralysis, which developed quite rapidly.

"The senses of pain and touch were not perceptibly impaired. Hearing was fairly good, and did not seem to be influenced by the disease.

"The following, taken from the notes of the examination made by Dr. U. S. Bird, June 18, 1908, shows the condition of the eyes:

"Vision right and left 23-cc. Fundi apparently negative. Right disk paler on temporal side. Visual fields show right hemianopsia (both eyes) for white. Partial trial showed red field contracted, but approximating white. Pupils react slowly, but positively to light thrown on blind areas, showing that lesion was back of pupillary center.

"Motor aphasia was present. The patient understood what was said to him, but was unable to answer. He was neither able to read nor write. Familiar objects were recognized, however, showing that there was no mind blindness, and that the lesion was probably unilateral. He was unable to copy written speech, or even draw a crude circle from a copy.

"As a rule, the patient was perfectly docile and rational, but at times mental aberration was quite noticeable. On one occasion, while waiting for dinner in a hotel dining-room, he drew his pipe from his pocket, filled it with tobacco, lighted a match, but instead of lighting the pipe, he set fire to the paper shades of a chandelier over his head. As they blazed up, he drew back as if someone were going to attack him, and seemed frightened. When questioned as to his action, he simply replied that he wanted a light. In two other instances, similar deviations from the normal were noticed.

"BLOOD, URINE AND FECES.

"Considering the gravity of patient's condition, the blood findings were rather remarkable:

Date	Reds	Whites	Hemoglob in (Talq. Scale)
June 10 08	4,972 000	11,900	65 per ct.
July 12 08	5,059,200	9,000	75 " "

Date	Polymer.	L. Lymp	S. Lymp	Eosin.	Trans	Mast.
June 20 08	67	5	19	7 2	1,8	
July 12 08	70.6	4.2	16.2	7.8	1	.2

"In the first differential count, two normoblasts were found.

"The urinary examination showed slight indicanuria and spermatozoa. Feces were negative.

"AUTOPSY NOTES.

"Dura firmly adherent to pia along longitudinal fissure on both sides, due to presence of worms. Dura adherent in left occipital region. Many worms found scattered over surface of brain between dura and pia. Focus found on surface of first right temporal convolution. Small cyst on surface of right temporal lobe. More worms on left than right side.

"Area softening in anterior limb of internal

capsule containing worms. Small area in corona radiata of right side and several in left. Practically the whole of the left occipital lobe destroyed by worms. Left lobe of cerebellum contained eight groups of worms. Two groups in medulla; one under floor of fourth ventricle, just anterior to middle peduncle; the second on the lateral surface, just behind lateral peduncle (both on left side).

"Worms found in two places in dura of spinal cord. No parasites in cord. Worms very numerous in skin and muscles of back.

"Skin and subcutaneous tissues of chest and abdomen much thickened, ranging from two to three and one-half inches, and filled with worms too numerous to estimate. Muscles on front of chest and abdomen dotted with cysts one-half to two inches in length, and one-fourth inch in width, filled with worms. The thoracic muscles contain more than abdominal, and seem to be atrophied. Numerous masses of worms under parietal peritoneum.

"Capsule of right kidney firmly adherent in several places. Evidence of fibroid and fatty change. Two cysts on surface of right kidney, not containing worms. Spleen slightly enlarged, with evidence of fibroid change. Gall-bladder enlarged, containing fluid bile.

"No parasites found in gostro-intestinal tract.

"Pericardium contained two foci of worms. Heart slightly enlarged, otherwise normal. Parasites very numerous in lungs. No adhesions of pleura.

"Many lymphatic glands involved. On section these glands are filled with worms.

"Scrotum contains numerous parasites of unusual size. One taken from this locality measured nine and one-half inches. Testicles normal."

SPARGANUM PROLIFERUM GATESIUS (*Stiles*).

The sparganum proliferum is a whitish mass, with great variation as to form, containing one or several heads, which possess power of motion. The form of the parasite varies in different parts of the body. In the loose connective tissue of the scrotum striking regularity was noticed in the shape of the worm. The largest worm taken from this locality was uniform in shape (about three times as broad as thick), and contained no supernumerary heads. In the subcutaneous tissues of the chest and abdomen, however, they manifest great irregularity, and possess numerous accessory heads. In this locality where fibrous tissue was quite prominent, it is possible that these are degeneration forms. Many specimens from this location showed such marked enlargement at one end, as to resemble the cystocercus. Superficially the worms present a rough, irregular exterior, often giving the appearance of segmentation.

On section the worms present a muscular system, and some evidence of nerves. Certain bodies which are thought by Ijima to be reserve food bodies (cited by *Stiles, Bul.,* No. 40) are also present, but are by no means constant. In the specimens taken from the scrotum none were found, and very few in the lungs. Worms from the brain, lymphatic and subcutaneous tissues contained them in abundance. A substance taking a similar stain was also found in the cysts and adjacent tissues surrounding the worm. Most of these bodies were either round or oval in shape, but a few were elongated, resembling a canal filled with the material. In one instance, a body gave a concentric appearance. These bodies do not occur in the younger worms, nor in the more active parts of the older worms.

The substance found surrounding the worms, and the so-called food bodies, are closely related, if not identical, as determined by stain reactions. A mucoid substance was noted to exude from the infected tissues in the Japanese case (cited by *Stiles, Bul.,* No. 40); a similar substance was found in the Gates case. This substance is evidently that seen in the stained sections surrounding the worms. This substance may be either the product of degeneration or excretion; most probably the former.

With the exceptions of the brain, it was noted that these substances occurred in tissues in which the conditions were such as to interfere with free growth, as in the subcutaneous and lymphatic tissues. In the brain, the explanation may be found in the character of the circulation and mechanical influence. Even in these tissues the food bodies were never found in the young worms in process of migration, and the surrounding mucoid substance very rarely. They were both almost uniformly found, however, in the old cysts containing one or several worms. In the worm taken from the scrotum, measuring nine and one-half inches, it was impossible to determine

whether it was surrounded by the mucoid substance, as it was put in saline solution while alive, but no bodies were found in the worm itself. As this was an old worm, it seems safe to assume that this substance is the product of degeneration of the surrounding tissues or the worm; probably both.

A more or less irregular network of canals is present in most of the worms, which open through pores on the surface. In the large specimen, taken from the scrotum, however, these canals showed more regularity. There were two sets—longitudinal and transverse. The longitudinal were irregular as to position in the worm, but their size and general direction was more uniform. Longitudinal sections cut on the plain of the flat surface revealed pores and canals running entirely across the worm, at a distance of from one-twentieth of two-fifths m. m. apart. In one instance the canal was complete, running entirely across without a break. In another instance a canal was lost in one of the larger logitudinal canals. They are inclined to be spiral, and bear a striking resemblance to a sweat duct. In the longitudinal sections cut at right angles to the flat surface, onl yone canal was found running across the worm.

In normal salt solution the worms not only showed motion, but power of locomotion. The movement resembles that of an earthworm. The head is usually invaginated, and evagination results in forward movement of the worm. This invagination usually occurs at the extreme tip of the worm, but in several instances it was noted some distance back of the tip, giving the appearance of a cuff. The head may be turned in any lateral direction during the process of forward movement, or at other times. The whole worm may curl up and roll over. In addition to these movements peristaltic movements may be seen moving from one end of the body to the other. Any or all of these movements may be preciptated by applying heat, shaking, or blowing on the surface.

Worms in normal salt solution at room temperature (about 80) were alive after four days and six hours. In nutrient bouillon either in the incubator or at room temperature, or in normal salt solution in the incubator, they only lived from one to two days.

In most instances, especially in the subcutaneous tissues, the older worms have distinct capsules, but nothing like the extent Ijima claims for his case (cited by *Stiles, Bul.,* No. 40). In other locations many have no cyst walls, and the younger worms are never encysted, unless previous to their exit from the mother cyst. The tissues surrounding the worms manifest a marked tendency to capillary hemorrhage.

The worm propagates itself in the body by means of supernumerary heads, which separate from the mother worm and migrate.

As to the mode of transmission, nothing can be said, as all attempts to grow the mature worm failed.

The question of the modus operandi of the disease presents itself, and seems to be more difficult of solution than usual. The only possible indication of a toxine formed by the parasite seems to be the ease with which the patient became fatigued. This symptom is generally present in cerebellar disease, and in view of the findings at the autopsy, it seems justifiable to assume that this was true in this case. The fact that no other serious symptoms were present, except those due to the presence of the worms in the brain, would lead us to the conclusion that their action was purely mechanical.

EXPERIMENTAL.

No. 1. Male white rat, fed on sparganum, July 12, 1908; again on the 24th and 28th. Killed October 25th. No evidence of parasites found.

No. 2. June 21st. Six larvæ placed in peritoneal cavity of a young female cat. After recovery from the operation the cat appeared healthy. Killed November 1st. Three small bodies found in the peritoneal cavity, probably the remains of the worms.

No. 3. July 12th. Six worms planted beneath skin and between muscles of abdomen of half grown female cat. Killed November 1st. Entirely negative.

No. 4. July 13th. Worm planted in jejunum, peritoneal cavity, and under skin of male dog. Killed October 28th. Negative.

I have heard of two other cases in Florida, which may have been similar to this. One was infected on Terra Ceia Island and moved to California. The only information I had was from his daughter, who wrote me that her father died with worms in his flesh. But as to details I could not learn. Also Captain B.

Fogarty, Sr., tells me of a German woman dying in Key West about fifty years ago by name of Schmidt, whose flesh was full of worms. Another case is on record—a Japanese woman, Tao Kanaka, who was in a hospital in Tokio, under care of Dr. Kondo. Ijuma gave a very full story. It seemed to be very similar to this case. I incorporated a very full report in my other paper. These facts present themselves in review. This is a disease about which we know very little. It kills very slowly; we do not know how infection takes place. It is a larval form of some kind of tapeworm. It was probably taken in some form of uncooked meat. The Japanese case, the probable Terra Ceia Island and Key West cases, were infected near large bodies of salt water. It would hardly be by eating fish, as that food is cooked or dried and smoked. This process would destroy the infection. I will state here that this worm, when taken from the flesh and placed on dry glass or wood, dies in about an hour. I obtained about a thimbleful late one afternoon from the patient, put them in a dry bottle and corked them up for better examination. Next morning I found only a conglomerate mass of liquid substance with few fat globules floating on surface.

Clams, oysters and scollops, and other shell fish are eaten raw, and if the infection was in these it is more probable that it could be conveyed by these means.

The patient seemed to have acne. It started at one point on left shoulder, then on left breast, and was confined to left side for a period of about fifteen years. Then it gradually spread to right side. It never made appearance on surface of body exposed to sunlight, which, I suggested in another paper, led me to think that a proper treatment would be by some form of light that would penetrate flesh.

I, being a country doctor, had no such appliances with which to experiment. Although his digestion and assimilation were good, and he appeared to be well nourished, yet he became exhausted after little exertion. Though his heart muscles were not affected, the pulse was very rapid. There was probably a toxin excreted by worms. Nearly half of left brain was a mass of worms, yet he never complained of headache or dizziness, and was apparently rational to the last few days of life. The worms were encysted in every part of body except between membranes of brain and spinal cord. They were abundant in convolutions of brain, free to crawl about.

There were none free in pleura or abdominal cavity. Though they were numerous in lung tissue, yet there was no cough or other symptom to indicate it.

Aphasia and symptoms of tapes developed in later years of life.

I am indebted to Drs. McRae, E. W. Bitzer, Vincent and T. M. McDuffie for assistance rendered me in presenting this case.

PENETRATING INJURY OF THE BRAIN. RECOVERY.*

By W. ARMISTEAD GILLS, M. D., Richmond, Va.

Asst. Surgeon S. A. L. Railway; Asst. Demonstrator of Anatomy, Medical College of Virginia; Ex-Student-Officer, Medical School, U. S. A.

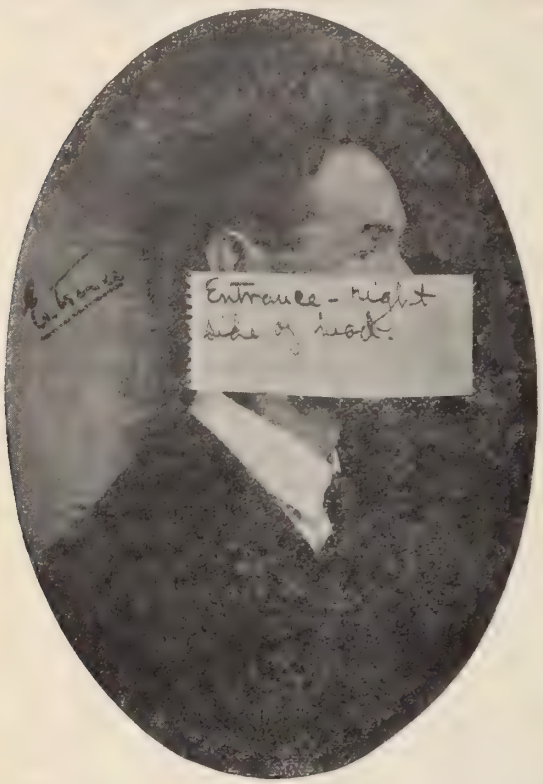
On December 19, 1907, I was called at 10 A. M. to the Emergency Hospital of this city to attend a white man, engraver, aged 30, who had shot himself with a 32-calibre revolver, the ball entering the right side of the head two inches behind the upper temporal ridge and one inch above the zygoma, traversing the frontal region, passing entirely through the bone of the opposite side (but not through the skin) at a point midway between the frontal eminence and the superciliary ridge, an inch to the outer side, a skin incision being necessary to remove it.

I learned that the patient had gone to his place of business as usual about 7:30 A. M., and was found on a pile of excelsior by a fellow workman at about 8 o'clock. The ambulance was summoned, a temporary dressing applied and the patient removed to the hospital. Upon my arrival there, I found the patient almost pulseless, with breathing very shallow, but conscious—recognizing my voice. His eyes were so badly swollen by this time that one was unable to recognize him; and because of the swelling, it could not be determined if there were any ocular changes present. I noted the presence of brain substance on the cheek. An incision of about an inch and a half was made through the skin and the ball removed without any trouble.

I called Dr. Murat Willis and after consulting, we agreed to take him to the Memorial Hospital after he had sufficiently reacted. This

*Read before the Richmond Academy of Medicine and Surgery, April 15, 1909.

was done at 3 P. M. Treatment was tentative and conservative. Upon removal of the dressings, it was found that each wound extended to the brain. Drainage was put in each, an



ice-cap applied to the head, a mercurial purge given and the patient placed in a dark room under the care of a competent nurse. The head of the bed was elevated; a saline solution four ounces every fourth hour per rectum, ordered; the eyes cleansed with boric acid solution; the ears and nose irrigated with saline solution, and morphine given to induce sleep.

Being controlled by cold sponging, his temperature at no time exceeded 103.5 F., and reached the normal on the sixth day. The pulse ranged from 85 to 116; respirations from 20 to 26. Speech was, for several days, incoherent, and the patient appeared confused, making several attempts to get out of the window, necessitating a restraining sheet. The only focal sign present at any time occurred on the third and fourth days—twitching of the toes and fingers.

About the eighth day, the edema about the eyes disappeared sufficiently for the pupil reflex to be tested, when it was found normal. Drainage was employed throughout, the wound healing by first intention. On the fifteenth day, the patient's condition being so satisfactory, he was removed to his home, where the wounds were dressed several times subsequently. One day, while he was straining at stool, owing to increased intracranial pressure, the wounds, which had not entirely healed, opened and permitted the escape of serous fluid. I was called and dressed them, with the assurance that all would be well, explaining that the loss of bone at the entrance and exit wounds made these points weak—that the normal resistance was gone.

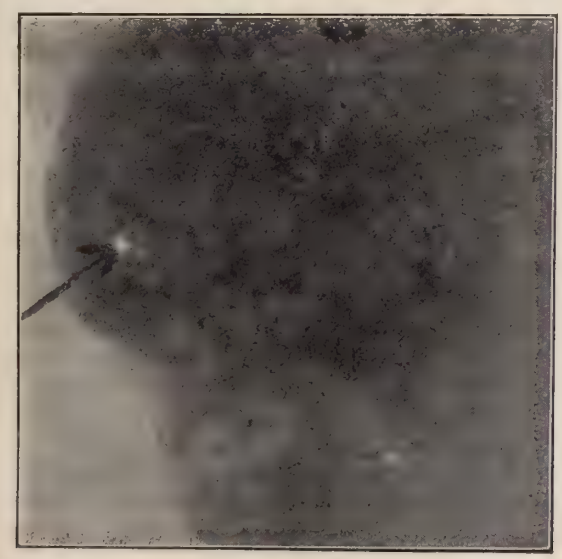
After the patient was dismissed as a surgical case, he presented himself, at my request, at intervals for inspection for about three months. During this time he complained of a constant pain in the occipital region, partial deafness and loss of sensation in the finger tips, all of which have entirely disappeared.

In cases of this character, especially the one

I present, the best treatment to employ, in my opinion, is conservatism, only interfering when we have a specific purpose in view, and then under the most aseptic conditions.

Despite my persuasion, the patient returned to his former place of business; but he has moved to the country to live, coming in to the city in the mornings to business.

I feel that it is not out of place to mention the ballistics and volistics incident to this case. The character of wounds produced by the missiles from fire-arms are dependent upon their weight, size, velocity and shape. The kind of tissue destroyed in each case depends upon a combination of these factors; and the particular tissue or structure of the body upon which their influence is exerted. A projectile can only produce a traumatism when it is in motion. A .32-calibre revolver fires a missile whose velocity is low (700 feet per second); hence, it is readily arrested and lodged, as in this case. On account of the low velocity, there is usually little lateral displacement of energy (explosive effect), and most of the bone and tissue destruction is confined to the track of the ball. When velocity is low, the entrance and exit wounds do not differ much in size, nor is there surrounding destruction of parts. The presence of lead in the tissue, as shown in the radiograph, is due to the fact that this was



Point of arrow shows, radiographically, track of ball. Fragments of missile are seen about tunnel.

an unjacketed bullet and easily chipped off by bone when it passed through. Missiles of this character leave particles of lead in and about osseous tissue when they penetrate it. It appears that infection would occur in cases of lodgment with bullets traveling at such low velocity as to be stopped in the tissues, and likely convey infection of foreign matter into the wound. Experience, however, shows the contrary; or, if there be any, certainly not of a high degree with undeformed bullets—those used in civilized warfare. Missiles which have been deformed (those used in savage warfare), or the irregular shape and large size of shell fragments produce a large wound of entrance into which infection is more readily carried, and these, rather than low velocity, are important factors in the production of suppuration.

At my request, Dr. Beverly Tucker, a neurologist of this city, made an examination of the patient fourteen months after injury. His findings are as follows: Apparently in good health; answers questions intelligently with no sign of annoyance, and submitted to examination in a perfectly natural manner. I saw him wait upon several customers without showing anything abnormal. Deep reflexes preserved and equal, although both knee jerks seemed slightly diminished. The station is good with eyes open and closed. No sign of trophic disturbance; voice natural and fluent. Absence of tremor and ataxia. Absence of any disturbance of mentality. Sense of smell impaired; dry substances, such as granulated tobacco and spices not recognized. Pupils react to light and accommodation. Sensation normal.

409 *East Grace Street.*

INTESTINAL PERFORATION IN TYPHOID FEVER.*

By CHARLES C. TENNANT, M. D., Charlottesville, Va.

There is probably no disease that has been so fully covered by medical literature, or so ably discussed at medical meetings as typhoid fever, so that with considerable hesitation I take up this, one of its most dreaded and fatal complications.

Most practitioners have several cases of typhoid every year, and in each case this most unhappy complication is liable to occur, regardless of the mode of treatment.

In fact, so frequent is this complication that statistics compiled from many sources, place the deaths due to perforation at about three per cent., and if we will remember that a great many perforations show up in the post-

*Read before the Piedmont Medical Society, at Orange, Va. April 17, 1909.

mortem room that were not diagnosed in the wards, it will be seen that it is the cause of death in at least one-third of all cases.

Osler, in 1901, reported a series of 829 cases of typhoid, with sixty-three deaths and twenty-three perforations. (Eleven cases were operated on, with five recoveries.)

Scott reports 3,006 cases, with a general mortality of 8.05 per cent., while the mortality from perforation was 2.58 per cent. (Sixty cases were operated on, with thirteen recoveries.)

At Roosevelt Hospital, between 1901-1906 there were 618 cases treated, sixty-eight deaths and thirty-three had perforation. (Twenty-one were operated on; seven recovered.)

Patterson collected from literature 21,215 cases; in this collection there were 671 that had perforation, a frequency of 3.16 per cent. Statistics show that perforation is as frequent in children as in adults, and that it occurs at almost any period of the disease, and even during convalescence.

Osler says that it may occur from the first to the sixteenth week. It is, however, most common during the third and fourth week, nearly one-half (46 1.2 per cent.) occurring in these weeks. It generally occurs in the moderate or severe types of the disease, and in those associated with distention or hemorrhage, however, it may occur in the ambulatory form.

The most constant symptom as well as the first to appear is *pain*. This is generally sharp, sudden, paroxysmal, and of increasing severity. It is seldom absent except in cases of severe toxemia and coma, which form but a small percentage of those generally met with. The most frequent situation is the lower right quadrant of the abdomen.

Tenderness usually follows, and may be general, but is more frequently localized in the lower right quadrant. This may be elicited only on moderately pressure, or the abdomen may become so sensitive that any attempt to palpate will bring on a spasm of the muscles.

Muscular rigidity sets in soon after perforation has occurred, and is found present in varying degrees of intensity, although it is usually well marked.

Shock is not always present; however, it may be quite severe or slight, and comes on after the pain of perforation.

There will nearly always be a drop in temperature at first, but rises when peritonitis sets in.

An increase in the pulse rate is the rule, but by no means is this invariable, and sometimes a tendency to perspire, or chilliness is noted.

Leucocytosis, which may be present or absent, with or without perforation, should be disregarded, as also the presence of liver dullness, for it is absent in less than a third of the cases.

Irritability of the bladder is sometimes noted. These are the earliest and most conconstant symptoms, and the ones upon which we should make our diagnosis, because the latter ones will be those of a developing peritonitis, whose rapidity will depend upon the amount and character of the escaping intestinal contents. These, I will not enumerate, for we are all familiar with them, and it should be our aim to make a diagnosis before they occur.

Diagnosis should be based mainly upon the sudden sharp pain, followed by tenderness and rigidity, the latter being the most important, and seldom absent. Besides these, we may have more or less shock, fall of temperature, an increase in the pulse rate, or the patient may perspire, shiver, or complain of feeling chilly, and pass his urine involuntarily.

Should we have a typhoid patient who begins more or less suddenly to complain of pain or of an uneasy feeling in the lower abdomen, and before long, whose abdomen becomes tender and rigid over the lower right quadrant, we would be justifiable in making the diagnosis of perforation, for, as Osler says, we must operate when we have a probable diagnosis; to wait till all the symptoms of perforation are established means to rob the patient of his chances for recovery.

Typhoid patients stand a laparotomy remarkably well, provided too much time is not taken, and in the few cases reported in which there were no perforations found, the patient has usually recovered.

To be differentiated from perforation are pneumonia, pleurisy, urinary retention and thrombosis of one of the abdominal veins, these being among the most frequent conditions whose symptoms are liable to confuse us.

The mortality in those cases that do not come to operation is estimated to be fully nine-

ty-five per cent., although some of these cases undoubtedly recover by the formation of adhesions before the escape of intestinal contents.

In those that have undergone operation the mortality has been about seventy-two per cent. Patterson reported 842 cases collected from literature with 609 deaths—a mortality of 72.32 per cent.; others have reported series of cases with the mortality ranging from twenty-three to eighty per cent. The 842 cases collected by Patterson include nearly all of the earliest cases operated on; so, of course, does not give a fair mortality percentage for those operated on at the present day, but puts it far too high.

There is probably no disease, not excepting diphtheria since antitoxin has been discovered, in which change in treatment has reduced the mortality so noticeably as the modern treatment of general septic peritonitis.

The so-called Murphy treatment has given by far the best results, and has proved more effective than could be hoped for in the hands of its originator.

He has reported fifty-one cases of perforative peritonitis, including one duodenal, two gastric, five typhoid and forty-three appendical, with but two deaths, and neither from the peritonitis by itself.

In view of the fact that such brilliant results are being obtained by the use of Dr. Murphy's method of treatment, it seems a pity that more of these unfortunates do not come to operation.

Dr. Blake, 1907, estimated that in the United States certainly not more than two per cent. of the total number of perforative cases were operated on each year; since then, however, the number may have slightly increased, and let us hope that the number will steadily increase each year.

Murphy calls attention to the importance of the Fowler position, and says it is underestimated, and that the patient should be so placed from the time the diagnosis is made until convalescence is well advanced.

The medical treatment has not been discussed as it is only applicable to a few cases, such as those that refuse operation, and those that are unable to secure the services of a surgeon, owing to their remoteness from civilization.

Hardly any patient is too far gone not to have a slight chance to recover from an operation. As soon as the diagnosis is made, an operation should be advised and performed as soon as practicable, for even should shock be present, it will be relieved by the anesthetic. Ether by the drop method is very satisfactory with these patients.

The operation should cover as short a time as possible, and all undue manipulation of the intestines be avoided; this will be eliminated if we remember that the last eighteen inches of the ileum is the site of perforation in eighty per cent. of the cases; the large bowel is perforated in about twelve per cent. of the cases, usually the cæcum; the appendix in three per cent.

The jejunum, upper ileum, Meckel's diverticulum, and gall-bladder are perforated in rare instances.

Usually there is but a single perforation; sometimes several are found, and also points of extreme thinness, which are indicative of danger. The size of the perforation varies from a pin point to several centimeters.

Ruptured or necrossed mesenteric gland may be found instead of a perforation, and if so, of course, should be removed.

704 *Jefferson Street.*

NOTES ON FACE PRESENTATION.*

By GEORGE H. THOMAS, M. D., Romney, W. Va.

There are four varieties of this mal-presentation designated by the relation of the chin to the bones of the pelvis; and it is quite necessary that we familiarize ourselves with these sufficiently to diagnose the particular kind as each has a treatment of its own.

I do not deem it necessary or expedient to rehearse the symptoms, diagnosis and treatment of face presentations in detail, as any one can obtain such information from text-books.

Authorities claim that one case of face presentation occurs in 250 of labor, and we should be thankful that it occurs no oftener. I have met with two cases, as follows:

1. The patient was a small primapara. The chin was to the left posterior, which rotated stubbornly towards the symphysis. Labor was very much prolonged, and the physical forces were weakening when forceps were applied, and we succeeded in delivering the child, but it could not be resuscitated.

*Reported to the Hampshire-Hardy-Grant-Mineral Counties (W. Va.) Medical Society.

2. Two months later, I was called in consultation to find a woman who had been in labor twenty-four hours; pains had ceased. Here we found the face presenting in a rather roomy pelvis, with chin to the left and well around to the sacrum. Failing in the attempt at rotation of the head, we applied the forceps and found delivery by this means impossible; finally, under chloroform, we brought down the occiput, and in an hour labor was ended by the natural forces.

Correspondence.

El Paso as a Resort for Tuberculosis, Etc.

Mr. Editor:

El Paso is a relatively new, and very beautiful city, with a population of about 50,000, and is rapidly growing. It is in the extreme southwestern portion of Texas, and connected by an electric car line with a Mexican town just beyond the State boundaries. In this Mexican town, contrary to religious customs of "old Virginia," nearly every Sunday there are bull-fights and fights between bull-dogs and coyotes, etc. Large crowds go over from this city, as also come from all the nearby Mexican section to witness these Sunday amusements.

El Paso is in the midst of the formerly known "Great American Desert." It is at an altitude of about 3,700 feet above sea-level. The climate is invigorating and remarkably dry. The rainfall is of the lowest degree compared with the humidity of other sections of the United States. The average number of cloudy days per month does not exceed three the year round. The following record from the daily weather map of the U. S. Government Bureau, located in this city, is but a type of the winter days here: February 11, 1909, minimum temperature during the last twelve hours, 30 degrees. Maximum temperature during the last twenty-four hours, 58 degrees. Wind, at 8 A. M., four miles per hour. Precipitation in the last twenty-four hours, 0. So, you see, this section is remarkable for the number of sunshiny days during the year, and also because of the dryness of the atmosphere. Such conditions are ideal for the treatment of tuberculosis, rheumatism, a number of skin diseases, etc. Tetanus is rare in this neighborhood, but hydrophobia, from the bites of coyotes and skunks is not uncommon.

There are about eighty-five or more doctors in this city, a number of whom came to this place as a health resort for lung troubles, etc., but who have now recovered strong, good health, and are active practitioners. The expression is often heard that one is not here in business for his health, but the population of El Paso is quite largely composed of persons whose business *was* primarily to seek health, and here most of them would now exclaim, "Eureka!"

I moved from Mt. Carbon, W. Va., about a couple of months ago, and am now connected with the Albert Baldwin Sanitorium as house physician. This is a very large institution, especially devoted to the treatment of tubercular cases, and the records show a most gratifying series of results which have given it a national reputation.

In noticing the effect of amyl nitrite in two cases of alarming hemoptysis in young men, in the past ten days or so, in this sanatorium, in which it acted quite speedily in giving relief, I am reminded of my medical student days in 1875, while you were lecturer on experimental therapeutics at the Medical College of Virginia. Then, amyl nitrite was something new, and you were demonstrating on chloroformed cats, etc., the resuscitating value of this agent —even when life was apparently extinct. Ever afterwards I have felt comparatively safe when administering chloroform to patients, if amyl nitrite was at hand.

Later, when I shall have further studied the conditions for health in El Paso, I hope to be able again to write you.

Thomas R. Evans, M. D.

El Paso, Texas.

Proceedings of Societies, Etc.

NORTHWESTERN MEDICAL SOCIETY OF PHILADELPHIA.

Regular meeting held April 5, 1909. The President, Dr. Clarence P. Franklin, in the chair.

Modern Surgery of the Stomach.

Dr. John B. Deaver said: To-day, the chief problems of surgery lie in a region which may be covered by the palm of the hand, placed

on the epigastrium. Surgery of the appendix, Fallopian tubes and biliary appartus has already been elucidated. The early operations for gastric ulcer and cancer have been amplified and improved because it has been shown that, in these alterations of the stomach, expectant methods, assisted by drugs and hygiene fail to work a cure. Of all diseases of the stomach, *ulcer* is the most important; it is not so uniformly deadly as cancer, but it is vastly more common; and, beside, a large percentage of these cases result in malignant change, including in this category the duodenal ulcers. It may be said that one out of every twenty individuals has been at some time the subject of this affection. It is, therefore, evident that the disease either gives no symptoms in many cases, or that they fail in recognition. It is repugnant to our ideas of an ulcerated process to suppose that it can exist without symptoms and, in the presence of such a multitude of cases of indigestion, it would seem to be going rather far afield to ascribe these symptoms to undiscoverable causes, and leave ulcer the symptomless wonder of the clinician. It is plain that the symptomatology of this condition must be enlarged, that we must not make diagnosis dependent upon such conditions as pain of a certain type, with nausea and vomiting, hematemesis and melena. Inability to carve out a sufficiently definite symptom complex to render possible an early diagnosis should not lead to discouragement, but should be rather an incentive to greater effort.

Ulcer is vastly more frequent than our diagnoses would indicate, and we must, therefore, be treating many cases in a haphazard manner for dyspepsia, who are really suffering from ulcer—thus permitting a certain percentage to go on to perforation, hemorrhage or the callous stage.

Statistics show that recurrence takes place in nearly half the cases after "medical cures." The mortality of recognizable cases of gastric ulcer ranges from ten to fifty per cent., while in duodenal ulcers it is somewhat higher. It is plain, therefore, that in diagnosable ulcer one should not temporize. The indication is rest for the part, and not only rest, but a long rest. This factor removes most of these cases from the sphere of the medical man to that of the surgeon, as it is impossible to provide rest by medical means sufficiently long to permit a cure in the majority of cases. The efficiency of gastric drainage has been amply demonstrated, and eminent surgeons are a unit as regards the remarkable results obtained in this way. The mortality of gastro-enterostomy in the best hands is only from one to three per cent., and is constantly diminishing. The results of seven eminent surgeons in nearly a thousand cases show seventy-three to ninety-three per cent. of cures, which is wonderful, considering that only the most severe cases have been turned over to the surgeon. Gastro-enterostomy, therefore, is the treatment of choice in simple, chronic, persistent, symptom-giving ulcers of the stomach and duodenum.

The complications of ulcer are various, and include perforation, which may be acute or chronic, and lead to peritonitis, extensive adhesions, subphrenic or other form of abscess; hemorrhage, which may be slight, or even so severe as to be fatal from erosion of the coronary artery—conditions which call for immediate operation. Spontaneous cure brings with it special dangers. Cicatrization of an ulcer at the pylorus is a not infrequent cause of stenosis, with subsequent gastric dilatation; in this latter condition tetany occasionally develops. These conditions are readily relieved by gastro-entero-anastomosis.

In dealing with uncomplicated ulcer, where it is desirable simply to secure drainage, gastro-enterostomy by the posterior no-loop, or very short method, uniting the most dependent portion of the stomach with the jejunum at its origin behind the peritoneum, has proved the best in my hands. I have not seen a case of vicious circle follow one of these operations.

In regard to the direction of the incision in the stomach, I have usually inclined it slightly to the right from above downward, suturing the proximal portion of the jejunum to the upper angle; but have lately made the opening incline to the patient's left with equally good result. In cases of simple stenosis of the pylorus without dilatation a pyloroplasty after the method of Finney is to be preferred; but gastro-jejunostomy gives as good a functional result. If the stomach wall is greatly distended or hypertrophied, the latter operation is better. Caution in diet after operation is advocated because neglect of this defeats the object of procuring rest for the diseased area.

Nowhere do we see the need of a professor

of practical medicine in our schools more than in connection with cancer. Cachexia, hematemesis, mass, enlarged liver and anacidity are symptoms not of cancer, but of approaching dissolution. The reason why carcinoma of the stomach is relatively so much more deadly than carcinoma of the lip or breast is simply that an early diagnosis by direct inspection and palpation cannot be made in cancer of the stomach without the formality of an operation. There is little use of the practitioner bothering his head about a diagnosis if he insists on certainty. By the time he is certain of his diagnosis he is also certain of the prognosis. Therefore, I am inclined to say that a positive diagnosis is a disgrace to the physician in attendance, providing he has been following the case for some weeks or months.

The latest device which has been invented to defer operation until it is too late is gastric analysis. I have had for some years routine examination of the stomach contents made in all cases of upper abdominal disease in which the stomach may be affected including disease of the gall-bladder, but disappointment has been so frequent and great that I have come to place no reliance on the method. The last fifty examinations subsequently controlled by operation show that anacidity is not infrequent in diseases other than that of the stomach; that in early carcinoma the acidity is but slightly altered; that in late inoperable carcinoma, but slightly subnormal acidity may occur; that anacidity has almost invariably gone hand in hand with an extensive inoperable growth; blood indicates ulceration which does not occur in the early stages; that the Oppler-Boas bacillus occurs only in the late stages of cancer, and may be found in conditions of stasis from benign causes. TheX-ray gives no aid of any moment. Where surgery will do the most the X-ray will do the least.

The patient approaching or past middle life, who either suddenly or on top of previous gastric disturbances finds that his digestion is getting rapidly worse; has little inclination to eat some articles of food, oftenest meat; feels a certain languor and lack of vigor; has eructations of gas, regurgitation, a slight feeling of discomfort in the epigastrium, or left hypochondrium, and begins to lose weight in the absence of a very definite cause outside of the stomach should have his stomach inspected directly. This will, at times, be needless, but in a large percentage of these cases we will find early neoplasm curable by extirpation.

The ideal treatment for cancer is complete excision. In the majority of cases it is located in the pyloric region; and by a fortunate arrangement of the lymphatics, does not tend to spread to the fundus, but the glands of the lesser curvature, and the adjacent gastrohepatic omentum are early involved. A wide excision embracing these structures gives hope of circumventing the disease in the early stages. My method is essentially the Billroth No. 2, which consists in removal of that part of the stomach lying between the first portion of the duodenum and the Mikulicz-Hartmann line, which is an imaginary perpendicular drop from the cardiac orifice to the greater curvature. The cut ends of the stomach and duodenum are closed, and a posterior gastro-enterostomy done in the usual manner. A complete gastrectomy is rarely indicated.

The surgical treatment of advanced carcinoma in which it is hopeless to get beyond the growth is a very unsatisfactory part of surgery. The most frequent call for palliative operations comes from pyloric stenosis, with retention. In such cases gastro-enterostomy often gives marked temporary relief, and adds about three months to the expectation of life. In obstruction of the cardiac orifice, death from starvation may be prevented by gastrostomy, which is, however, not indicated so long as the patient can swallow liquids. In the future I hope there will be fewer explorations in cases with a positive diagnosis to see whether something can be done, a hope practically always illusory, and more explorations in suspicious cases while there is yet a chance of cure.

It is necessary to have constantly in mind those minor and functional disorders of the stomach in which ill advised operations can hardly be expected to result otherwise than in failure. Such cases may be hard to differentiate, but they usually show other neurotic stigmata and are very susceptible to any change in treatment or hopeful suggestion.

Gastroptosis is usually associated with general visceroptosis; and an operation on any one of the displaced viscera promises little. I am not inclined to recommend operation in cases of ptosis and certainly not until the effect of a properly fitting abdominal supporter and gen-

eral medical treatment is tried. In gastrectasia in the presence of a patulous pylorus, operation may be serviceable and give truly brilliant results; but in such cases medical treatment should be given a thorough trial before operation is done. The best operation is posterior gastroenterostomy done at the most dependent part of the stomach. I have never seen a case of acute dilatation of the stomach and have come to the conclusion that the reason for this is the early and free use of the stomach tube in all cases that show accumulation of fluid or gas in the stomach.

The chief point to emphasize, however, in all this subject is that we must not allow the frequency of minor and functional disorders to divert our attention from the common occurrence and serious nature of ulcer and cancer. Ten years ago gastric surgery was far behind diagnosis. Today it is just as far ahead and we wait, perhaps impatiently, for the internist to come abreast.

Modern Methods of Diagnosis and Treatment of Diseases of the Stomach.

Dr. John H. Musser said:—Our modern methods both in diagnosis and treatment are born of a more true conception of physiology and of the pathology of gastric disorders than upon any special methods that have arisen in the determination of gastric disease.

The diagnosis of gastric affections must be based upon our conception of subjective conditions, such as pain, the careful analysis and study of which helps us immensely in determining the nature of the morbid process, if such be present, or of a functional disorder. It is a most important matter to weigh just as carefully subjective phenomena as objective phenomena. The various methods of diagnosis are those that have been employed for long periods of time, and some of them have stood us in good stead, while others have not, unfortunately, brought about the satisfactory results that we hoped for. We get most valuable data by physical examination.

Of the aids in physical diagnosis which we now employ inflation of the stomach and the use of the stomach tube and X-ray to determine the size and position of the organ furnish the most reliable data in the determination of the nature of the disease. As to inflation, I must give a word of caution. In very thin subjects in whom the antero-posterior diameter of their abdomen is not very great, the stomach has not any room to be a deep seated organ in a deep vertical extent; and, hence, must spread out over a very large surface. Hence we are often led astray in thinking we have to do with a grave dilatation of the stomach in thin subjects when such is not the case. The anatomical state of the individual must be considered when reckoning upon the size of an organ as determined by physical methods of examination. In the laboratory studies which I carry on in the investigation of disease I have gotten down to only a few that are really of practical value. The determination of the total acidity, the amount of hydrochloric acid, the amount of combined acids, the presence or absence of lactic acid and—of great importance to the functional power of the stomach—the amount of pepsin secretion, are those which we can rely upon. We learn also very much by a gross inspection of the meal removed, as to the quantity, the presence or absence of mucus and the odor.

The salol and the iodide of potassium test for absorption have not made good.

Many methods have been employed to determine the motor power of the stomach, and I have concluded fully that it is just as satisfactory to wash the fasting stomach two hours after taking food, as to employ any other method. Notwithstanding the use of all these methods, we must be brought face to face, from time to time, with the question of exploratory operation; and while we can with confidence ask many surgeons to explore, yet we must feel that that is a serious step to take. Even, however, with this as a resort we go very little into the diagnosis of the true nature of gastric disorders if we confine ourselves to simply a study of the function and the organic change of the stomach itself. The crux of the whole situation is not the study of this one simple organ itself, but it is the study of the individual; and unless we study carefully the nervous system the cardiovascular system, the renal secretions and eliminations, and size up our patient after a general survey of the individual, we will go far afield in many instances in the recognition of the true gastric complaint.

The essential methods of treatment are those which are truly physiologic, and are based on dietetic and hygienic management rather than

upon any other form of management that we can trust in. There have been some few new drugs added to those which have been employed in days gone by, but they do not stand the test of time. The simple drugs and those which can be divided into two groups are all that are required in the management of stomach diseases. On the one hand, we find that we must use a group of drugs that may be called sedatives and antacids, and on the other hand we must use a group of drugs which are called stimulants. Indeed these two words apply even to diet. In selecting a dietary for individuals, we just pick out either one line of foods that are soothing are sedative and calmative to gastric function or another line that are stimulant; and by keeping in mind these lines in guiding us we are pretty sure to arrange satisfactorily a scheme that is going to bring about a cure. The sedative and antacid procedures whether by drugs or whatsoever, are those which we give in hyperchlorhydria, hyperacidity, etc., and the other two groups we use in motor insufficiency.

The group of drugs in the first instance comprise bismuth, oxalate of cerium, belladonna and opium. We don't need to go very far; and adding magnesia or soda or some antacid, we complete the list; and if there is fermentation present, we add some one or two simple antifermentatives, as resorcin, creasote and charcoal.

If, on the other hand, we want stimulation we use nux vomica, strychnia or some remedy of that kind, or perhaps we are called upon under these circumstances to use a few remedies that are anti-fermentative. There are some who think they have to use taka-diastase and pepsin, but I have found in the last five years, that is is not necessary to use these remedies. They have to be given in such enormous doses that it is almost impossible for the patient to take them. I cure more cases of gastric disorder with iron than I do with anything else from the modern methods of the treatment of gastric disease that have been evolved from our knowledge of the physiology and pathology of these affections.

DISCUSSION.

Dr. Judson Daland: So far as the diagnosis of gastric disease is concerned, it seems to me that most of the important points in diagnosis are to be considered as modern. Some are more recent than others, and the one instrument most important in this direction is the stomach tube. The obtaining of gastric secretion for diagnostic purposes is sometimes one of difficulty so far as obtaining the consent of the patient is concerned. Therefore, it is a matter of some little practical importance that this procedure be carried out with as little discomfort as possible. To carry out my diagnostic work I use a vacuum bottle; so that the moment the tube engages in the contents sufficient gastric juice for an examination will be obtained. If you have any difficulty you can put positive pressure on the jar, and in this way expel any obstruction. I attach considerable importance to the character of the testmeal. I believe the test meal should be larger—at least the whites of three eggs and at least three pieces of toast thoroughly chewed and five or six ounces of oatmeal. This test-breakfast should be removed an hour after. It is a mistake to allow more than an hour after the breakfast. The amount of material withdrawn at the expiration of the hour should be very small. The question of pepsin is usually a negligible one. In most cases there is a sufficient amount; one rarely sees a diminution of pepsin. Hydrochloric acid is not present in gastric carcinoma. If hydrochloric acid is in excess, very rarely is gastric carcinoma present. The question of motility is important. It is important to diagnose if possible all cases of stagnation, of retention that exist for a period of eight hours. Often the simple test of gastric splash will serve. Say the meal is taken at 1 and at 7 o'clock the gastric splash is searched for, making sure the patient has taken no water; it indicates the presence of liquid and air. Sometimes there may be liquid and no air, and you will get no splash Next is the determination of motility by the introduction of the stomach tube and removal of stomach contents at a period when there should be none. It demonstrates that the stomach does not empty itself at the proper time. The X-ray is an absolutely modern method. I do not agree with Dr. Deaver that it is absolutely of no use in gastric carcinoma. The X-ray is simply in its beginning stage, and ultimately the early recognition may come this way; and although at the present time the gastric carcinoma cannot be diagnosed absolutely, there are certain conditions and findings that point strongly towards the probable existence of gastric carcinoma. These cases make one more suspicious

and anxious to do exploratory operations to demonstrate whether due or not to gastric carcinoma.

Next, is the filling of the stomach with air in order to determine gastric dilatation. In the old days of Flint, they employed the ordinary Seidlitz powder and there were cases of death from this cause. No doubt these cases were due to great over-distention. By using bismuth and any liquid you can see the stomach fill out with air by the fluoroscope and by this method we have an easy method of producing gastric dilatation at will.

The symptoms he mentions are symptoms of so many diseases. These symptoms are only reflex, often toxic and have nothing to do with the stomach as an organ whatsoever, and may be chronic and still not the slightest suspicion of gastric ulcer or gastric carcinoma be entertained. Therefore we must go very slow along the line of recommending prompt surgical procedures.

One word as to the group of cases which we overlook very frequently; they are those chronic latent ulcers which masquerade as acute ulcers. One sees the case for the first time and does not get a full history. He believes it to be an acute gastric ulcer. He puts the patient under treatment and the patient symptomatically recovers. He gets so much better that everybody is satisfied. He is told it will return and after considerable difficulty an operation is done and chronic ulcer found. The patient was entirely divorced of symptoms and had gained in weight. This is the reason why so many of this class of cases not only give all the features of chronic gastric ulcer with induration which persist without symptoms in the interval, but these are the cases that build up gastric carcinoma.

Dr. Frank Hammond: I would like to ask Dr Deaver whether, in operating on the lower abdomen, he makes it a regular rule to operate on the gastroptosis if that condition is present

Dr. Babcock: I agree most heartily with all Dr. Deaver has said regarding carcinoma—how important it is to make early diagnosis and give the patient the benefit of it. It is a curable disease in a certain percentage of cases—perhaps more so than cancer of the cervix. In regard to gastric ulcer I wish my opinion were as fixed as that of Dr. Deaver. I have personally become less sure that we are curing the patient by surgical measures alone in certain types. Where we have ulcers producing mechanical symptoms, where the pylorus is entirely occluded and the patient suffers only from obstructive symptoms, then gastroenterostomy gives the patient a condition which is practically curative. If these ulcers be acute or sclerotic, in which there is no occlusion and in which the pylorus is not obstructed, I am not sure that the operations of gastroenterostomy invariably relieve symptoms. Experimentally and as the result of operation, we have reason to think that the food passes out after gastroenterostomy as before. In some patients, very satisfactory results followed operation, and later there was return of the old symptoms—the signs of indigestion and discomfort. In these cases there was every reason to believe that the openings were just as patent, that the ulcer continued. Are these operations curative because they drain the stomach, or permit bile and alkaline secretion to enter the stomach? Are we curing the patient by mechanical measures, or are we curing the patient because we are introducing from the intestinal tract alkalies which reduce the acidity? The mortality after operation on gastric ulcer is at present very low. The immediate results are quite good. But there is a certain amount of morbidity in these forms of gastric ulcer which I think should be worked out further.

Dr. Musser: I wish to call attention to one omission I made in respect to the study of the gastric contents and the stools. That is, the determination of the presence or absence of blood—gross or occult.

Dr. Deaver: I am very glad to have heard the discussion of my friend, Dr. Daland. I can endorse all Dr. Musser has said. I subject the patient to all these ordeals. The good that comes to those patients who have lesions is practically nil. The cases which have gone the rounds are cases for operation, that is for exploratory operation. With Dr. Musser I agree that we should be a little careful about who operates. The temptation is to operate. I have done many operations in the past that I am ashamed of to-day and I think every surgeon who tells the truth will say likewise.

Dr. Daland had a good many "ifs" and "ands" in his discussion. He did not hit the bull's eye on any occasion. I am quite convinced that in his X-ray work he will continue to miss the target. I don't wish to disparage

the X-ray. The cases diagnosed by X-ray are not cases for operation by the surgeon. I do not believe the X-ray can diagnose incipient carcinoma. In some border line cases Dr. Musser and Dr. Daland have agreed that diagnosis is impossible in a certain percentage of cases If that man's life is studied and he does not improve after systematic and physiological treatment for three months then I claim the empirical treatment should cease. This thing of operating on neuroses of the stomach has reflected great discredit on the surgeon.

In regard to Dr. Hammond's question, I never operate on proptosed stomach. As I stated in the paper, in case of proptosed viscera in the presence of great dilatation and stagnation of food, I have seen good results from posterior gastroenterostomy.

As a surgeon, I have more trouble to keep from operating on people than in operating. I refuse to operate on nearly as many patients as I operate on. I say no, and they go elsewhere. I do not say they are operated on elsewhere. The public want to be educated. The family will ask for an operation and the physician will hang on and give opium until patients are rotten with pus. We swim in pus every afternoon at the German Hospital.

Book Notices.

Suggestive Therapeutics, Applied Hypnotism, Psychic Science. By HENRY S. MUNRO, M. D., Americus, Ga. Second edition. C. V. Mosby, Medical Book Co., St. Louis. 1908. Small 8vo. 360 pages. $3.00.

This "hand-book" is intended especially to instill "those basic principles of physiological psychology upon which the scientific therapeutic application of suggestion in all its forms necessarily depends.' This second edition has brought the subject well up to date, and is a book of much value for "doubting Thomases" in the profession to read and study. It proves the wonderful curative power of suggestion, properly applied in the sickroom. It is so paragraphic in its make up that it is sometimes a little difficult to follow the author in detail; but throughout the book impresses the lesson—remember the power of suggestion in the sickroom for good or evil, according to whether it is properly applied or not.

The Changing Values of English Words. By RALCY HUSTED BELL. Hinds, Noble & Eldridge, Publishers. New York. 12mo. 302 pages. Gilt top. $1.25.

This is a book of very general interest—especially to one concerned in word-making. It was written as a supplement to another volume by the author on the *Worth of Words.* Only a few examples of twelve pages are taken from Shakespeare as showing the change of meaning of English words since his day. But if one wants really to get an idea of the words added to the English language in the last fifty years or so, he has only to examine the unabridged dictionaries of to-day as compared with those of only a half century ago. For instance, to the 1,716 pages of Webster's Dictionary of 1864, the 1908 edition contains 283 added pages—many of the words in common use to-day having a very different meaning from that of a century ago. One taking up the book under notice is enticed to read more and more of it, and regrets when he turns the last page.

Editorial.

"The Repeal Bill" Committee.

The Legislative Committee of the Medical Society of Virginia—Dr. George A. Stover, South Boston, Va., chairman—having in charge the Repeal of State License Taxes on Virginia Doctors, is doing most commendable work. It is establishing in every city and county "auxiliary committees" of earnest workers and influential doctors to properly inform prospective Legislators of the true merits of their claim, and we trust that all of the profession of the State will render help to these committees in their respective communities Most encouraging reports are coming in from all sections. This Committee will, no doubt have a cheering report of progress to present during the session of the Medical Society of Virginia, at Roanoke, October 5-8, 1909.

In approaching prospective Legislators on the subject, there should not be the slightest embarassment, whether the party be a Democrat, a Republican, or a Prohibitionist. The measure proposed by the medical profession is not a political one. It is simply a claim to cor-

rect a wrong too long imposed on doctors; and every citizen should feel sufficient interest in the claim, rightfully presented, to recognize at once its propriety and justice.

The former Committee of the Medical Society of Virginia worked hard to collect data for the help of the present Committee; and much of the material thus secured will be utilized. The criticisms of some of the profession of the work done by the former Committee are unquestionably ungenerous in view of the zeal displayed in attempting to secure the wishes of the profession. However that may be, that Committee has retired after two or three Legislative years of arduous duties, and an entirely new Committee has come to the front which though none the less earnest in the cause, hopes to present the facts in a new light to the General Assembly of Virginia during its 1910 session Had the former Committee succeeded in its undertaking, as it came so near doing, none of the profession would now be heard of as criticizing its methods.

But with the new Committee in the field, we trust every doctor in Virginia will give it his unqualified help and encouragement. This year, this Committee will have the co-operation of the Committee of the Virginia Homeopathic Medical Society which is as much interested in the result as the regular profession. The combined influences of the two schools of practice, it is hoped, will have a far greater effect than if simply one school were actively engaged in the work. The cause is one of natural interest to every practitioner in Virginia; and those not members of the Societies of either of these medical schools are likewise interested and should render all the assistance in their power

The expenses connected with keeping the Committee of the Medical Society of Virginia actively in the field have required the raising of funds by subscriptions. From some localities and counties the responses have been very generous. But in a few places the contributions have been very scant. Why this great disparity in ordinarily generosity as to a cause in which every doctor is interested we do not know. The form of request for subscriptions sent to all parts of the State distinctly states that "if there is any balance of said *special deposit* [with the Treasurer] after the hoped for success, it is to be considered a donation to the Society's treasury." There are constantly so many demands upon the treasury of the Medical Society of Virginia for professional good that none ought to begrudge the few dollars that may remain from this emergency fund after the next Legislature, if indeed any balance remains.

There are a great many of the profession who heartily favor the movement as to the Repeal Bill, and have cheerfully contributed of their means to the "emergency fund" just spoken of to whom the success of the Bill will scarcely have a personal interest. Some on account of age or failing health can scarcely expect any benefit for themselves. The official positions of others do not require of them to pay State license taxes; and yet many such because of their love of their life's profession, and because of their appreciation of the duties of the true physician are liberally contributing to the fund in order to educate legislators as to their duty to reputable doctors. Before they pass away they wish to see accomplished for the on-coming generation of doctors what they were unable to secure for themselves—exemption from State *license* taxes.

Some years ago, city *license* taxes were removed from Richmond doctors. The good results are everywhere manifest in this community. We hear of no one who is willing to have the city *license taxes* reimposed. Why other cities and counties of the State have not been equally considerate of their doctors, seems inexplicable.

Army Medical Corps Examinations.

Preliminary examinations for appointment of first lieutenants in the Medical Corps of the Army will be held on July 12, 1909. Full information concerning the examination can be procured upon application to the "Surgeon General, U. S. Army, Washington, D. C." The applicant shall be a citizen of the United States, between 22 and 30 years of age, a graduate of a medical school legally authorized to confer the degree of doctor of medicine, of good moral character and habits, and shall have had at least one year's hospital training or its equivalent in practice. The examinations will be held concurrently throughout the country at points where boards can be convened.

All appointments are made with the rank of first lieutenant ($2,000 per annum). At the

end of three years the officer is promoted to captain at $2,400, which, at the end of five years' service is increased to $2,640, etc. In addition to this, officers are furnished with quarters, medical attendance and medicines for themselves and their families, the privilege of the commissary, mileage at the rate of seven (7) cents per mile when traveling under orders, and allowed one month's leave per year with full pay, which may be allowed to accumulate to a maximum of four months; also the privilege of retirement. These allowances are estimated to add from $1,200 to $1,600 to the yearly compensation in the grades of First Lieutenant and Captain.

Applications must be complete and in possession of the Adjutant General of the Army on or before June 10, 1909. Free correspondence with the Surgeon General's Office is invited on any subject connected with the examination. There are at present 103 vacancies in the Medical Corps of the Army.

The South-Piedmont Medical Society

Held its eighth regular meeting at South Boston, Va., April 22d, thirty doctors being in attendance. The President, Dr. H. B. Melvin, of Houston, called the meeting to order. Routine business was first transacted, after which papers listed on the program were read and discussed. This was followed by reports and exhibition of cases and specimens.

The following newly elected officers for the ensuing term were installed: President, Dr. James S. Irvin, of Danville; Vice-Presidents, Drs. C. H. Gibbs, Charlotte C. H.; W. M. Smiley, Houston; W. J. Innes, Brookneal, and J. M. Robinson, Danville; Treasurer, Dr. J. L. Kent, Lynchburg; Secretary, Dr. George A. Stover, South Boston, Va.

After adjournment, a banquet was given at the local hotel by the Halifax doctors, Dr. Floyd J. Gregory, of Keysville, acting as toastmaster.

The next meeting will be held at Lynchburg, November 8th.

It is worthy of note that this Society was organized at South Boston, Va., with only nineteen members three years ago, and the membership to-day totals nearly one hundred.

Transactions Medical Society of Virginia.

Notwithstanding the fire which destroyed the building and all its contents in March, in which the *Transactions* of the last session were nearly ready for the binder, the printers are far enough advanced to lead us to hope that the volume will be ready for distribution by the last of this month. Had the fire not occurred, the volume would probably have been ready during March. Fortunately, with proof sheets in hand, it is not thought that any material has been lost. When it is remembered that it required at least two weeks or more for the printers to re-establish their "plant," they are to be complimented on the "rush work" done which enables them to promise the volume so soon.

American Medical Editors' Association.

The coming meeting of this Association to be held at the Marlborough-Blenheim Hotel Atlantic City June 5th and 7th celebrates its 40th Anniversary and an unusual program has been prepared for the occasion. It is expected that delegates from the foreign medical press will be present and every medical editor should make an effort to meet with this Association

Pamphlet on Ophthalmic Neonatorum.

The Secretary of the American Public Health Association has sent to the Health Department of Virginia, for distribution to doctors, about 100 copies of the report of the special committee of that Association, on "Ophthalmic Neonatorum, and Its Prevention." The Health Commissioner, Dr. E. G. Williams, states that he will send a copy of the report to any doctor requesting it.

Free sample of new Patent Two-Finger Obstetrical Examination Cot will be sent to physicians sending card or prescription blank. Other novelties. Address Medical Equipment Company, 149 West 23d Street, New York.

Wanted slightly used instruments and all kinds of office equipment, in good condition. Fair prices for reliable goods. Distance no object. Write Henderson, 149 West 23d Street, New York.

Hypertrophy of the prostate with urinary blockage is often seen with complications, the result of lack of aseptic precautions. In this class of cases it is well to remember the usefulness of sanmetto to avoid the establishment of catheter life.

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Original Communications.

THE VALUE OF THE VON PIRQUET TEST FOR TUBERCULOSIS.*

By JOHN STAIGE DAVIS, M. D., University of Virginia.

Professor of Pathology and Hygiene, University of Virginia, etc.

My subject has been selected not because of its novelty, but in view of its growing importance, now that the State has awakened to the seriousness of the problem it concerns.

Any harmless and simple means, within universal reach, of detecting tuberculosis in its incipiency would be most welcome, as, by it, the prompt separation of infected from non-infected cases in hospitals would be facilitated and proper treatment could be instituted far sooner than at present.

Even as recently as my first student days this disease was regarded as incurable and its recognition carried a doom, from which no appeal could be taken; but in the last ten years this hopelessness has been dispelled and some measure of relief obtained by prolonged rest and proper alimentation, mainly in the open air, whether at high or low altitudes.

These "cures" take months or years in consequence of the relatively advanced character of the cases sent to them.

By the diagnostic measure conveyed in my title, a means has been found of such delicacy as to afford the recognition of the nature of the trouble considerably before any other suggestive symptom or sign presents itself. This will reduce the period of successful treatment to weeks and may prevent the necessity for change of climate altogether by the prompt institution of proper measures.

At the University of Virginia Hospital sufferers from pulmonary tuberculosis are not admitted, so that my observations there have been confined to twenty cases of arthritic, bony, peritoneal and cutaneous forms of the disease, besides eleven cases of obscure troubles, which were either suspicious or very uncertain in nature, as the accompanying table shows.

A few cases of lung trouble outside were also utilized in order to see if there were any peculiarities of the reaction that would suggest this form of infection.

Koch's New Tuberculin furnished in capillary tubes with a bulb was exclusively used after the first six cases and the method of proceedure resembled ordinary vaccination.

The left arm was cleansed, sterilized and dried, without the use of any antiseptic (which employed at first prevented the reaction in two cases—at least these responded a week later when the chemical agent was omitted, though there is possibly another explanation for them.)

Three scarifications were made, three inches apart, the central one acting as a control, with a chisel pointed blood sticker twisted between the thumb and fingers eight or ten times until the epidermis was just denuded without drawing any blood.

The control was made on the bare skin midway of the arm to dispose of individual cutaneous irritability—it having been found needless to use sterile bouillon or salt solution, which were first tried in six cases each.

Three inches on either side of this, above and below, a drop of the tuberculin was placed and the scarifier, wiped and cleaned, inserted through this drop and revolved as before. Both places were left to dry and no dressing employed. All were examined in three, six, nine, twelve, eighteen, twenty-four, thirty-six and forty-eight hours and thereafter general supervision sufficed to detect all phenomena. The first four were made by Dr. Marshall and four

*Read before the session of the South Piedmont Medical Society, held at South Boston, Va., April 20, 1909.

others by Dr. Flippen, both of whom I wish to thank for their assistance.

The reaction consisted in the appearance, in positive cases, of a pinkish areola in six to forty-eight hours, which rapidly extended outwards to a maximum in twelve, twenty-four and forty-eight hours, when a central deep pink zone surrounded by a paler one is visible. The central zone is raised and indurated, a feature more conspicuous in the colored race than the redness. Twice vesiculation was observed. It lasts from one day to several weeks and ends as a dry scale with a little pigmentation occasionally. The degree of the reaction is indicated by the width of the areola—less than 10 mm +, 10-20 mm ++, and more than 20 mm +++. The control was in all cases negative.

The only subjective symptom was itching complained of in three cases, one very violently.

In every case of undoubted tuberculosis a positive reaction was obtained. It occurred earlier in the pulmonary, pleuritic and osseous cases than in the joint affections, but reached a maximum more slowly and persisted longer in the latter.

The greatest extent of reaction occurred in the pulmonary and pleuritic cases, the least in the osseous and those clinically uninfected.

Its negative value was best seen in case twenty seven, of a child three years old, where the symptoms were those of psoas abscess, but the culture showed staphylococcus.

Insufficient time has elapsed to draw prognostic conclusions in these cases.

Six cases reacted in which no tubercuolsis was seriously suspected and four suspicious cases failed to respond to the test.

The nature of the reaction is hypersensitiveness of the tissue cells to tuberculin, which von Pirquet speaks of as *allergy*—an altered capacity to react to infection or intoxication—which shows itself in various forms—such as vaccination and revaccination, varioloid, serum disease, hypersensitiveness, nettle rash, hay fever, and especially tuberculosis and syphilis, where the irregular wave-like course and polymorphism of the lesions suggest a varying reaction.

Significance of the reaction:

As a diagnostic measure, its greatest usefulness is seen in children, since almost all adults have latent foci, which would be thus revealed.

In clinically healthy or not very ill individuals its absence excludes tuberculosis.

It is absent in moribund and advanced cases. Its promptness and course are of prognostice value.

Positive reactions are of three kinds:

1. The "normal," which reaches its maximum in twenty-four hours and pales in two or three days.

This indicates early and favorably progressing tuberculosis, if the reaction is strong.

2. There is a *very early* and *ephemeral reaction*, which is often missed, as it fades quickly. This is very unfavorable.

3. There is the strong late reaction which appears in thirty-six hours, reaches a maximum slowly in two or three days and many persist several weeks.

This is often seen in cases clinically nontuberculous and indicates in any case an ability of the body to resist. A battle is being fought and the victory may be in doubt. The stage of the disease offers few indications as to its progress. A mere incipient apicial catarrh may be more serious than an advanced case, which often this reaction may show.

The reactive capacity may be increased by favorable surroundings or decreased by unfavorable and thus indications as to the efficiency of treatment may be obtained.

The common knowledge that most persons have successfully resisted tuberculosis infection and that this reaction shows their power, would dispose of the objection that a positive result in the clinically healthy might cause undue alarm with every cold or other ailment.

These conclusions of Wolff-Eisner and von Pirquet my observations have usually confirmed, but my material has not been extensive, nor the time of study yet sufficiently long.

Wolff-Eisner takes the peculiar view that it might be unfortunate to succeed in destroying all tubercle germs, as in that way we should lose the necessary stimulus for the production of protective substances and a chance importation would slay the race thus left defenseless.

In conclusion, I desire to commend this method for diagnosis and prognosis, above the ophthalmic test, which, despite all theoretic reasoning to the contrary, cannot be divested of cer-

tain dangers to the eye and is no more delicate nor reliable.

The Moro ointment method too is less cleanly and much more tedious in its application.

The von Pirquet test is, to my mind, for reasons stated at the outset, a most valuable addition to our scientific resources for the early recognition and prognosis of tuberculosis, and the doctrine of allergy that it involves offers many interesting problems for investigation.

THE ETIOLOGY OF RENAL SCLEROSIS, CHRONIC INTERSTITIAL NEPHRITIS.*

By R. T. STYLL, Ph. G., M. D., Newport News, Va.

The magnitude of Bright's Disease as a subject for analytical research is so great that I am compelled to limit myself to a study of its causative factors as a theme for this evening's discourse. Even in this I shall limit myself almost entirely to the presentation of one dominating etiological element.

We find chronic interstitial nephritis claiming our attention under three conditions. We meet with it as a result of arterio-sclerosis; as a primary affection; and occasionally as a sequence or chronic parenchymatous nephritis.

In the literature of the subject we find the classical causes of Bright's disease enumerated as follows: Age; heredity; syphilis; alcohol; dietetic influences; functional disorders of the liver; gout; lithemia; lead; climate; worry; business strain; rapid eating; lack of proper exercise; arterio-sclerosis, and, as Prof. Christian presented to your attention, chemic changes in the circulating medium. As Prof. Christian so aptly and so strikingly dubbed it, "Chronic interstitial nephritis is an end condition." As I have said, this disease follows arterio-sclerosis and chronic parenchymatous nephritis. While even in primary interstitial nephritis, it is a slow progressive degeneration which is chronic from the outset, and is but the forerunner of the changes which gradually take place in the organ in extreme old age. In a large percentage of these primary cases no cause can be discovered. In others heredity and the other classical causes are responsible for the disease. By careful and exhaustive examination, it will be found that families in which the arteries tend to early degeneration are especially disposed to a primary form of renal sclerosis. It is the form which follows upon an arterio-sclerosis that will engage our attention in this article.

In studying arterio-sclerosis as an etiological factor of chronic interstitial nephritis, we will necessarily be compelled to study arterio-sclerosis in general and its etiology in particular.

Arterio-sclerosis presents to us for analysis two forms, viz.: Localized arterio-sclerosis, and diffuse arterio-sclerosis. The former will demand but scant notice from us while the latter will occupy the central position in our attention.

Arterio-sclerosis is a chronic inflammatory and degenerative disease of the vascular system involving either the arteries, veins or capillaries, or all three at the same time. The changes are most marked in the more external layers of the internal coat of the arteries. The first step in the process is the infiltration of these layers with inflammatory products, consisting for the most part of small, round cells. These, by their accumulation, produce a bulging inward of the innermost layer of the intima. These layers yet for a while preserve their integrity and can be stripped off, exposing the diseased tissue beneath. This integrity of the innermost layers of the intima, together with the underlying tumefaction, is highly characteristic of atheroma, and will serve to distinguish it from fatty degeneration of the endothelial and subjacent connective tissue structures. In fatty degeneration the change begins at the interior of the artery and extends outwardly, and there is no inflammatory deposit beneath the endothelium. The next step after infiltration in the atheromatous changes consist in a fatty degeneration of the infiltrating cells, and a softening of the intercellar substance. Thus is formed what is known as the atheromatous abscess, the contents of which are pultaceous, or more fluid in consistence, and of a yellowish hue. When the lining membrane gives way, as it sometimes does, the contents are swept away in the blood current, and an atheromatous ulcer results. If, on the other hand, the lining membranes persist, the more fluid contents of the atheromatous abscess may become absorbed. By a still further change, this may calcify, forming a calcareous plate. The calcareous plates on the

*Read before the Newport News (Va.) Medical Society, April 27, 1909.

interior of the arteries are quite common in atheromatous subjects, especially in the aged.

When the inflammatory process is very chronic and of moderate intensity, an attempt at organization may result in a fibroid thickening of the intima. The organization is, however, seldom complete, the infiltration being interspersed with more or less fatty debris, the result of degeneration.

As I have intimated, our attention will be given to the diffuse form of arterio-sclerosis. By diffuse arterio-sclerosis I mean that form which invades the vascular system as a whole, especially the smaller vessels, and is commonly known as angio-sclerosis. The changes which take place in this condition are primarily irritative, beginning at times in the media or muscular coat and extending thence to the intima and external coats; at other times it begins in the interior; it always begins first in the arteries of small size. I am disposed to think the change is one of nutrition and finds its early beginnings in the nervous system, and its expression through the vaso-motor nerves controlling the vaso-vasorum of the arteries; and the thickening of the media may be the result of pressure due to spasm. That the changes begin in the media is established and confirmed by the recent experimental studies of R. A. Pierce and E. MacD. Stanton. It is contended by some that the changes in the intima constitute a repair process whose object is to compensate for the weakened media and the widened lumen.

To the hyperplasia succeeds in various degrees degeneration, usually fatty, but sometimes calcareous, resulting in weakening of vessel walls and occasionally rupture, especially in the blood vessels of the brain. This process extends also to the blood vessels of the kidney in renal sclerosis, but not as a rule in chronic parenchymatous nephritis.

Many theories have been advanced as to the cause of the degenerative processes which constitute arterio-sclerosis, such as toxic influences, infectious diseases, high tension and spasm of the vaso-vasorum. To these I would add another: An alternate spasm and paresis of vaso-vasorum. For a considerable period the problems involved, both clinical and pathological, have received decided attention from the investigator, the clinician, and practitioner, and extensive literature has arisen upon arterio-sclerosis from the clinical, histological and experimental points of view.

It was hailed as the beginning of a new era when Josue announced in the *Presse Medicale* in 1903 that he had artificially produced arterio-sclerosis in the rabbit by intravenous injections of adrenalin; and the matter was immediately taken up by investigators all over the world. As the outcome of the investigations Josue was absolutely sustained, and that not only the supra-renal extracts, but a number of other substances produced similar results: to-wit: Digitalin, barium chloride, hydrastin, hydrastinin, nicotine, nitrate uraninum, etc. All of these are vaso-constrictors and pressure raisers.

This would seem to sustain the position of those who contend that human arterio-sclerosis is produced by high tension and blood pressure. But, on the other hand, substances having the property of lowering blood pressure have been found to produce results similar to those obtained from adrenalin. In this class we find nitrite amyl., nitro-glycerine, nitrite of soda, carbonate of lead, thyroid extract, phloridzin, phloretin, paragangline and enphthalmin, which is said to lower blood pressure as violently and suddenly as adrenalin raises it. Therefore, Mironescu concludes that it is not the blood pressure, but the *sudden variations* in pressure that produce the effect.

Besides these, experiments which deal with bacteria and their toxins, while but comparatively few in number, promise, if continued, most valuable and startling results. The changes reported thus far resemble more closely human arterio-sclerosis than those found in the adrenalin type.

Gilbert and Lion, as the result of their experiments with the typhoid bacillus, state distinctly that in location, in gross appearance, and in histological structure the conditions produced approached very closely the arterio-sclerosis of the human. Klotz produced similar results with injections of typhoid bacillus and streptococcus. The injection of diphtheria toxin seemed to produce lesions more similar to those produced by adrenalin.

In the *Journal of the American Medical Association*, of September 10, 1904, Thayer and Brush, of Johns Hopkins University, in an arti-

cle entitled "The Relation of Acute Infections to Arterio-Sclerosis," present the results of four thousand cases, and place rheumatism, typhoid fever, pneumonia, malaria, scarlet fever and diphtheria among the causal factors of arterio-sclerosis.

In 1906 Wiesel described the changes which he observed in the peripheral vessels of young people and even children and infants dying from various acute infectious diseases. All parts of the peripheral arterial vascular system were examined. Eighty cases of diphtheria; eighty cases of scarlet fever and many cases of la grippe and other infectious diseases were studied. In all cases he found constantly a disease of the peripheral vessels that manifests itself as a degeneration of the muscular and elastic fibres, which is to be seen first in the middle coat and in the majority of cases is confined to this tunic. In severe cases this degeneration leads to a veritable necrosis of the vessel walls. In many cases the process extends into the intima, in which case this coat undergoes sclerotic changes, whereby permanent injury is produced. The disease affects all arterial vessels.

In general, the lesions may be classed in two groups, those in which the elastic fibres are involved principally, and those in which the muscular fibres receive the brunt of the injury. The exact location varies in different cases, but the vessels most constantly involved are aorta, the cerebral and coronary arteries. The lesions are found in typhoid fever, influenza, diphtheria, pnuemonia, scarlet fever and septic diseases. Huchard and his school make the acute infectious diseases of infancy and childhood largely responsible for the arterio-sclerosis of later years. Gout and diabetes may also be mentioned as causing a marked disposition toward arterio-sclerosis.

There is almost a consensus of opinion within the profession that pressure and tension are the main factors in the development both of the physiological and pathological alterations in the arteries, and that mechanical impairment is the underlying and primary cause of arterio-sclerosis.

There is an aphorism that has been accepted as an axiom that no man is stronger than his arteries.

Marked and lasting arterial hypertention is an important disturbance of circulatory physiology. It is either an evidence of pre-existing disease of the cardio-vascular mechanism, or an abnormal factor which sooner or later must produce changes in the heart and blood vessels. From hypertension arise many dangers to the individual, such as cerebral hemorrhage, ventricular hypertrophy, and renal sclerosis.

Almost invariably associated with the sclerosis of the peripheral vessels is hypertrophy of the left ventricle induced by the effort to overcome the arterial resistance. This resistance is a complex process, including, first, the narrowed and non-elastic vessel wall; secondly, the increased tension causing increased intravascular pressure, and, lastly, a compensatory action assumed by the heart in order to force more blood through the narrowed arterioles. In combined cardio-vascular disease the cardiac hypertrophy is secondary to the arterial sclerosis. It is well to bear this in mind as peripheral resistance in the arterial system is an important factor in the treatment of heart lesions. For pressure in the arteries depends on the force of the cardiac systole and the resistance to the outflow through the arterioles and capillaries. With a healthy heart the greater the resistance the greater the force of the cardiac contractions, and consequently the greater the lateral pressure on the walls of the arteries. A long continued resistance increases the work of the heart, which work induces hypertrophy, which, in its turn, sustains the pressure at a high level. If the resistance be too great we get cardiac failure, and then the pressure falls.

A full discussion of all the problems involved in a study of hypertrophy of the heart, with the increased output of blood, its increased activity and the consequent longitudinal strain upon the arteries would be manifestly out of place in a paper of the modest pretentions of this one; I shall, therefore, refrain from an attempt at an explanation of the mechanism and physics of the circulation. In this connection I shall content myself by calling your attention to the fact that it has long been a disputed point as to whether the resistance to the arterial flow, and consequently to the heart, is *situated* in the capillaries or the arterioles. Sir James Barr lends the force of his great name in favor of the resistance beginning in the ar-

terioles, and says: "It is extremely fortunate that there is this first line of defence created by the action of the vaso-motor nerves in the small arteries and arterioles." In case of vaso-motor paralysis the resistance to the cardiac outflow is transferred from the arterioles to the capillaries, and the fall in pressure becomes more gradual.

It has long been known that in cases of sclerosed arteries the blood pressure is likely to be raised. Until within the last few years this raised tension was estimated only by the fingers of the examiner. Now, we have at our command many instruments for the accurate measurement of this pressure. Most of these instruments measure only the systolic pressure, whereas it is, according to Rudolph, the diastolic pressure that we most require to know.

"P. M. Dawson (Br. Med. Journal, October 20. 1906) has shown conclusively that the best measure of the systolic output of the heart is the pulse pressure; that is, the difference between the diastolic pressure and the systolic pressure." A patient may have an abnormally high systolic pressure and yet have a dangerously low pressure between the beats. Although these instruments are of inestimable value in accurately measuring the blood pressure, the importance of estimating the blood pressure, both systolic and diastolic, by the trained finger, is as great as ever.

When, in case of arterio-sclerosis, we find the pressure to be high, it is necessary to find out how much of this hypertension is due to the disease of the vessel walls and how much to other causes. Erb and others of his school contend that the hypertension is due to a spasm of the muscle coat of the vessels, due to an irritation of the cortical centres presiding over the vaso-motor nerves, producing a narrowing of the lumen by contraction, thus offering a line of resistence to the velocity of the blood current, which to overcome necessitates an increased force behind.

The circulating apparatus consists of the heart, arteries, arterioles, capillaries, venules and veins. The blood projected into the aorta is propelled onward by the joint action of the elastic and muscular coats to be emptied into a receiver composed of a vast system of elastic tubes, the capillaries, which in a normal individual are at no more than one-third full. The blood propelled along the tubes of circulation exerts tremendous force in two directions —laterally and forward. The arteries consisting of three coats are strong, elastic and contractile. Their strength or power of resistance proceeds from the external sheath of connective tissue, which enables the vessels to resist without rupture the great distending force to which they are exposed at each systole of the heart. Their elasticity permits them to yield, without danger of bursting, to the sudden increase of the strain to which their walls are submitted at each stroke of the heart. It has the further effect of converting the intermittent flow of blood in the large arteries into a uniform and constant current in the capillaries.

Their contractility confers on them the power of adapting themselves to the variable quantities of blood they contain at different periods, and at the same time, as it is under the influence of the nervous system, it enables that system to control the amount of blood supplied to each tissue in accordance with its requirements.

The pressure of the blood in the vessels is the result of the force with which the blood is driven into them by the heart, and of the resistance that is offered to its onward movement. The pressure is preserved in the larger arteries because of the resistance offered to the passage of the blood by the smaller arterioles. The narrower the lumen of the arterioles the greater the resistance offered to the passage of the blood. Immediately beyond the smaller arterioles the pressure rapidly falls, because the blood then enters the wide area of the capillaries.

If the arteries were a system of rigid tubes, and had no outlet at their peripheral ends, it would be impossible for the heart to drive any blood into them, for fluids are incompressible, and no movement of the blood would occur; but the pressure of the blood against the walls would be increased during the heart's beat in exact proportion to the force of that muscle.

If, however, instead of being rigid tubes, the arteries were elastic tubes, and had, as before, no outlet at their peripheral ends, the heart would be capable of discharging its blood into them for a few beats, because the elasticity of the walls would permit them to yield and enlarge, but the pressure of the blood would con-

tinue to rise at each stroke of the heart until the limit of their resistance was overcome and they gave way, or until the resistance offered to the entrance of more fluid was equivalent to the force which the heart would exert.

But if, as is actually the case, the arteries are highly elastic tubes which terminate in a plexus of capillaries, it is clear that whilst at each stroke of the heart the pressure of the blood is raised throughout the arterial system, it must necessarily fall during the interval between two beats, because the blood is escaping by the capillaries. Pressure exists against the walls of the vessels, because at any moment and in any part, except in the veins close to the heart, the quantity of blood contained in the vessels is greater than they can contain if their elasticity is not called into play, and the difference of pressure in different parts is practically the cause of the motion of the blood.

The pressure in the aorta is greatly exalted at each stroke of the heart, but rapidly falls during diastole, as the blood escapes through its branches into the smaller arteries and from thence into the capillaries. The pressure necessarily falls in passing from the larger to the smaller vessels, because the resistance is lessened, a portion of the current being directed through the lateral channels, and hence the arterial pressure or tension, which is the pressure exerted by the blood in any particular vessel, is determined by the force with which the heart drives the blood into the arterial system, and the resistance which opposes the exit of blood from that system.

It is, therefore, clear that anything which causes contraction of the arterioles increases the resistance to the velocity of the blood and demands of the heart an increase of force from behind to compensate for the unnatural resistance. It is the observation of this fact that causes Erb and his followers to contend that arterio-sclerosis and consequent cardio-vascular disease finds its origin in spasm of the muscular coat of the arterioles. Any irritant in the nerve centres stimulates them to action, and, in obedience to the law of universal diffusion the smaller arteries everywhere contract and arterial tension is increased in every direction. Any substance exerting an inhibitory influence on the nerve centres will likewise be extended in every direction and paresis of vaso-vasorum will cause dilatation of the arteries and arterioles in every direction. Conditions at the nerve centres which bring about an alternation between contraction and dilatation of the vessels must necessarily weaken the walls of vessels by alternately stretching and relaxing their contractile and elastic layers, because as contraction relaxes and dilatation follows, the lateral expansion of the blood forced into the non-resisting elastic tubes stretches their walls to the limit allowed by the non-expansive tunica adventitia. A rapid and continuous repetition of this process must sooner or later overcome the resisting properties of the walls of the blood vessels, and we have resulting atheroma, aneuryms, and general arterio-sclerosis. Generally speaking, arteries may be said to consist of two concentric tubes—an inner fibro-elastic tube, and an outer muscular tube. This is a most important provision of nature in vessels whose most important function is to resist strain, withstand pressure and prevent over-distention.

Bearing this fact in mind, we can readily comprehend the essential point in the pathology of arterio-sclerosis to be the impairment and subsequent degeneration of the elastic elements. All observers are pretty well agreed that the degeneration is primarily and mainly located in the media. The first change that occurs is necrosis of the muscle cells, and as they are destroyed, the elastic fibres, deprived of their support, no longer able to withstand the pressure, are first stretched to their utmost limit and then snapped and broken. It is easy to comprehend how more readily and more certainly this can be accomplished by a series of alternate contraction and relaxation of a contracto-elastic tissue than by a contraction of the same.

The contraction and dilatation of the arteries and arterioles is under the influence and control of the vaso-motor nerves, and are necessarily responsive to any irritation of either the vaso-constrictor or vaso-dilator centres.

As the arteries and arterioles in the brain are thin walled and deficient in elastic fibres, they are not very contractile, and on account of the stress and strain to which they are frequently subjected they are among the earliest to yield to atheromatous and calcareous degeneration. Hence the frequency of miliary aneurysms. The toxins of infectious diseases and other poisons find easy ingress to the nerve centres and, by their irritating properties, readily excite action therein which is transmit-

ted in every direction, producing among other results both contraction and dilatation of the arterioles, which, if continued, will result in general arterio-sclerosis.

The arterioles of the kidneys are very muscular and well supplied with vaso-motor nerves; consequently they are conspicuously under the control of nervous influences affecting both the vaso-motor constrictor and the vaso-dilator fibres, and are necessarily as a consequence of any abnormal condition in the centres presiding over these nerves in a constant state of alternate spasm and dilatation, which is obliged to eventuate in degeneration of the arteries and the organ dependent upon them for nutrition.

I am among those who attribute interstitial nephritis with its contraction and fibroid overgrowth to the direct result of sclerosis of the blood vessels of the kidney accompanied by sclerosis of the system at large. It is for this reason that retinal changes occur early, and the eye man is able to diagnose an approaching nephritis before the clinician can find anything upon which to base a reasonable suggestion of the disease. As was pointed out by De Schweinitz, there is thickening of the arteries which compress the veins when they cross them.

The study of otitic arterio-sclerosis has given results similar to that of the eye. In the same way that a cortical centre of the brain, a pyramid of the kidney, a hepatic lobule or a retina may suffer from the cutting off of its nourishment, so may the labyrinth. An arterio-sclerosis of the terminals of the internal auditory will lead to a slow degeneration of the organ and a paroxysmal form of Meniere's disease shows as a result of spasms and paresis of the internal auditory artery. The ear specialist may find the lesion in the vestibule, semi-circular canals, the ganglion of Scarpa, or the vestibular nerve. An arterio-sclerosis of the internal auditory interferes with both the nuclear and vestibular vessels.

The kidney has a two-fold function of secretion and excretion and stands in intimate relation to the other organs. In exercising its functions it shows almost intelligent power of selection between what to take from the blood and that which it allows to remain. An exceedingly close relationship exists between blood supply and functional activity; therefore, the rate of secretion necessarily rises and falls with the blood pressure and the velocity of the current passing through the vessels. Webster says: "We must now consider nephritis as a renal manifestation of constitutional or metabolic processes."

When we consider the etiology of nephritis we find in every case the causative factor is one which has produced marked functional disorder. In the contracted kidney following arterio-sclerosis there is marked interference with the circulation in consequence of the loss of tone of the vessels, with resulting increased arterial pressure. As a consequence functional disorders of other organs acquire such importance as to require our greatest efforts from a therapeutic point of view. For instance, after the development of cardiac hypertrophy and dilation the kidney lesions become of secondary importance, etc.

SHEET OF DIRECTIONS GIVEN THE PATIENT AFTER A TONSIL OPERATION, INCLUDING TREATMENT OF POST-OPERATIVE HEMORRHAGE.*

By EDWIN PYNCHON, M. D., Chicago, Ill.
Professor of Rhinology and Laryngology, Illinois Medical College, etc.

Having recently read a paper on the "Treatment of Post-Operative Nasal Hemorrhage" at a meeting of the South Branch of the Chicago Medical Society, which was well received, and having just revised my "Sheet of Directions to Patients after a Tonsil Operation," I take the privilege of presenting the same, chiefly owing to the consideration given therein to the treatment of post-operative hemorrhage.

Any persistent or profuse hemorrhage following a tonsil operation is an annoyance to both the operator and patient and may, if not promptly and properly treated, even prove dangerous. The old adage which deals with the truism that "a stitch in time saves nine" applies nowhere more appropriately than in the treatment of tonsillar hemorrhage for, while in most cases it can be quickly controlled by prompt and efficient treatment, it may otherwise continue, or intermittingly recur, much to the patient's discomfort.

A hemorrhage from the throat or nose generally unnerves the patient more than would the loss of an equivalent amount of blood from some other location. Furthermore, owing to free

*Read at meeting of the Chicago Laryngological and Otological Society, March 9, 1909.

salivation, nausea and even vomiting often thereby induced, the amount of blood lost seems to be greater than it really is.

In order to meet emergencies arising in practice I have for several years followed the custom of giving the patient from time to time printed sheets of instructions to insure the following of directions, and to provide for complications which may occur. In no place is such a sheet of directions of more value than after a tonsil operation as a guide to both diet and treatment, and particularly in order to meet the possible occurrence of post-operative hemorrhage at any time within about eight days following the operation. I herewith append a copy of this particular sheet of directions.

DIRECTIONS TO THE PATIENT AFTER A TONSIL OPERATION.

For the first two or three days avoid all violent exercise or sudden motion. In going up stairs the ascent should be made slowly. Use the voice in moderation and do not attempt to sing or to speak too loud. In order to *avoid stooping* the use of the sniffing medicine may be omitted for the first twenty-four hours after the operation.

During the first night after the operation the patient should sleep with the head well elevated by using several pillows or else by putting an inverted chair under the bolster and pillows, the legs of the chair being against the head of the bed, with the back of the chair sloping on a downwad incline towards the middle of the bed. A still better way is to rest for the first night in a *reclining chair*. A large rocking chair, tilted well back, and held in this position by placing a small box or even a bureau drawer under the forward end of the rockers, will also serve admirably. If possible so to do it is better to avoid sleep for the first night and pass the time by reading an entertaining story.

Use the Soda Gargle every fifteen (15) minutes while awake. It is made by adding a teaspoonful of *Merck's* Bicarbonate of Soda to a glass of water, or what is still better, and more agreeable, add the teaspoonful of soda to a 25 per cent. solution of some one of the pleasant vegetable antiseptics, as Thymoline or Oleoseptine, which means one-fourth (1-4) glass of the antiseptic selected and three-fourths (3-4) glass of water. In place of the soda gargle some have preferred a weak solution of green castile soap. Sozodont well diluted might also be suggested.

As the wound is deep after any operation whereby the tonsil is thoroughly removed, and as such deep wound is often not well cleansed by gargling, there is advised additionally the hourly use of a suitable syringe whereby the wound may be well cleansed with the same solution (the soda gargle). The best form of syringe to employ is a hard-rubber one-half-ounce post-nasal syringe, the several openings of which insure efficiency. By having a mirror in a window, or by a gas jet, the wound can be easily seen, particularly so if the tongue is held down with the handle of a table spoon so the patient can direct the stream with sufficient force into the wound. In addition to the hourly use of the syringe the gargle should be used between times every fifteen minutes as directed for the first day or two, and less frequently thereafter during the remainder of the first week.

If the Iron Medicine is prescribed it should be taken as directed immediately after having used the soda gargle. The dose is one-half (1-2) teaspoonful to be introduced in the back part of the mouth, avoiding the teeth, and swallowed slowly. Immediately thereafter rinse the forward part of the mouth and the teeth with the soda gargle. Repeat the dose every two hours for two or three days, say at 2, 4, 6, 8, 10 and 12 o'clock. After this use less frequently, say every three or four hours as directed. *Caution.* The Iron Medicine is not to be taken until the day following the operation.

Should there be pain in the ear, apply dry heat which is best done by the use of a Japanese hot-box. After the "feu" is lighted and placed in the box it should be wrapped loosely in a porous cloth, as fly netting or cheese cloth, and tied with tapes over the painful ear. The heat will continue ceaselessly for four or five hours, particularly if two or three "feus" are employed, and the patient can meantime be sleeping. In lieu of the hot-box either a hot water bag, a hot plate wrapped in a towel, or a heated bag of hops, sand or salt may be used. Should either of the latter be selected a pair will be required so one can be in the oven heating while the other is being applied.

A *Wet Pack* worn about the neck at night, and when in the house, will often assist in diminishing the soreness. The pack is made by loosely wringing a towel after having been

dipped in ice-cold water. It should then be so folded that it will be about three inches in width and long enough to reach twice about the neck. After applying cover it with a strip of flannel, a dry towel, or still better, with a strip of thin rubber cloth, as dentist's rubber dam, or oil silk, in order to retain the moisture. When the wet towel becomes warm wring out afresh in cold water and re-apply as before, repeating every half hour. In place of the wet pack, if preferred, a bag of heated hops applied about the neck will prove soothing.

Inhaling Steam from the spout of a tea-kettle, or from a steam atomizer, three or four times a day when convenient so to do, will also tend to allay the soreness of the throat.

If Constipation occurs take a tablespoonful of Epsom Salts in water, or else a bottle of the Effervescing Solution of the Citrate of Magnesia made ice cold.

After the First Week, in place of the soda gargle, use a weak solution of the Chlorate of Potash, made by dissolving a teaspoonful of the srystals in a glass of water, and gargle with same every half hour or hour. If too strong add more water. Another good gargle is made by adding 10 drops of the Tincture of Myrrh to two table spoonfuls of water.

DIET.

Abstain from all alcoholic drinks, tobacco and highly spiced or hot foods.

For the First Day or Two after the operation depend chiefly upon milk and cream taken ice cold. If drawn through a straw or glass tube the swallowing will be easier. Ice cream is also recommended. Malted milk (taken in accordance with the printed directions upon the container) will be found to be a most excellent food. Kumyss or Matzoon might also be suggested.

After the First Day or Two oatmeal in cream cornmeal mush, cold soups, bread and milk, milk toast, raw or soft boiled eggs, tapioca pudding, corn starch and cup custard may be eaten. Raw oysters, when in season, may be taken, the smaller size as blue points being preferable, each oyster being cut in two or three pieces which can be easily swallowed. Ralston Health Food deserves particular mention as a food easily eaten and highly nutritious. The same may be said of currant jelly. Usually by the fifth day, and sometimes earlier, the throat has sufficiently improved to permit of indulgence in a more liberal diet, though solid foods had better not be taken until after the first week. By the eighth or ninth day the throat will have sufficiently healed so that anything can be eaten as usual.

During the First Few Days, while the throat is sore, it may be found to be easier to swallow if the tongue is pressed firmly against the front teeth of the upper jaw, while the head is thrown well back. Sometimes better results are attained by pressing the tongue against the lower front teeth and taking liquid food from a spoon introduced well back in the mouth, the head, meantime, being tipped backward as before.

HEMORRHAGE.

In Case of Bleeding after operation, discontinue regular medicines until bleeding is controlled, and gargle continuously with *very cold ice water made by adding a little water to a glassful of pounded ice.* To this may be added either a little lemon juice, or vinegar, or still better, a *teaspoonful of powdered alum.* A small piece of ice held in the back part of the mouth is often of value. The same may be said of an ice bag applied about the neck. Ice used as suggested will generally prove efficient. Should the ice gargle not control the bleeding, then have compounded the following prescription:

℞ Acid Gallic 3j
Acid Tannic 3iij
M. et ft. pulv.

Directions: Put a tablespoonful of the powder in a glass and add a tablespoonful of water, stirring until mixed. Dose, one-half teaspoonful swallowed slowly and repeated every one or two minutes. A little of this mixture may also be added to the alum gargle which should be used during the intervals between the doses of the gallo-tannic acid mixture.

If after this the bleeding should still continue, call in a nearby physician. In such case, I would respectfully make the following suggestions:

Hemorrhage After a Tonsil Operation is most likely to occur within the first six or twelve hours after operation, and when local anesthesia has been employed is owing to paralysis of the muscular coat of the bleeding vessels so they cannot contract as they normally would. This paralysis is due to the after effect of the cocain. The hemorrhage will generally be found to be capillary and to be from the entire surface of the wound.

Fainting generally causes a cessation of hemorrhage; therefore, the patient should be *kept standing* with head erect and meantime instructed to *take long and deep breaths.* If, furthermore, the arms are elevated above the head the blood pressure is diminished. As this position becomes tiresome the clasped hands may be held upon the head. See that the neck is not constricted: a *tight collar,* for example,*should be removed.*

Ergotole used hypodermically is of great value:

℞ Ergotole (S. & D.) 3ij.

S. Inject hypodermically minims xx, repeating same dose in fifteen minutes and even again in another fifteen minutes if required. Three doses are usually sufficient so the desired effect is produced, or toxic symptoms manifested, as syncope and nausea, which depress the heart's action, and as above stated tend to control the hemorrhage. *Aseptic Ergot* may be used in the same manner.

One Hypodermic of Morphine, preferably a maximum dose, is to be particularly recommended in lieu of the Ergotole in case the latter is not at hand. Norwood's *Tr. Veratrum Viride,* administered hypodermically, (say five or ten minims) has been employed successfully, it being like morphine a cardiac depressent, and furthermore causes nausea. The relaxation from vomiting will often prove effective. With this object the hypodermic administration of one-tenth grain of *Apomorphine* has been employed. Bosworth recommends an emetic of zinci sulphas. As cardiac depressants and relaxing agents are chiefly indicated, it becomes apparent that *alcohol* in any form *is to be avoided,* as are also hypodermics of strychnia, atropia, etc.

Astringents applied directly to the bleeding areas are often effective. The wound should be packed with gauze medicated with the astringent selected. For patent reasons one end of the gauze should be secured outside of the mouth. The following astringents might be suggested:

a. A paste made by adding powdered tannin to a twenty per cent. solution of antipyrine.

b. Powdered permanganate of potash made in a paste by the addition of four per cent. of vaseline.

c. ℞ Tr. Benzoin Comp. 3j
Iodoform 3j

d. Styptic Collodion, which is a combination of collodion, alcohol and tannin.

e. Turpentine.

Adrenalin 1-1,000 would naturally occur to one as a proper agent to employ. In my experence it has proven more effective in preventing hemorrhage than in stopping it after it has begun. In its use there is, however, the danger of recurrence owing to its secondary effect. If employed at all it should be used, as are the other astringents, by packing the wound with gauze saturated therewith, in which case due credit must be given to the gauze packing as tonsillar hemorrhages are often controlled by simply packing the wound with unmedicated gauze.

Monsel's Solution is not to be recommended for different reasons. As usually employed, by applying it to the wound with a swab, a coating is formed under which the hemorrhage continues, the blood meantime being swallowed. Furthermore, after its use the wound heals more slowly, hence my preference is for other methods of treatment. It may, however, be effective if gauze moistened therewith is tightly packed into the wound, though, as before stated due credit must be given to the packing of gauze regardless of the astringent employed. If for any reason iron is used it must not be applied while there is present any tannin, or an inky precipitate will form. The value of *Ferropyrin* has been highly extolled. It is a dry powder consisting of equal parts of the chloride of iron and antipyrin. It is applied to the bleeding area upon gauze, and in case of tonsillar hemorrhage would be packed into the wound. Owing to previously mentioned statements other methods of treatment are to be preferred.

Peroxide of Hydrogen is another agent of use for the control of hemorrhage, though it is of but little value in tonsillar hemorrhage. If used as a gargle an immense amount of froth is produced, under which the bleeding continues and the *froth may prove a danger if aspirated in the lungs.* The only advisable method of use would be to pack the wound with gauze moistened therewith, in which case the unmedicated gauze would prove nearly if not quite as effective.

The Hot Water Douche, which is so efficient in controlling surgical hemorrhage generally, might be employed. In such case no good can be expected unless the water is absolutely as

hot as can be borne (about 130 degrees Fahr.), and the stream must be *intermittingly applied directly in the wound* by means of a fountain syringe with a long tube, as a metal catheter, the patient meantime holding the breath and leaning well forward. Having the water acidulated with vinegar would probably increase its efficiency. On the whole it is not to be recommended in the treatment of tonsillar hemorrhage and is only mentioned as a substitute for other treatment in emergency should there not be available other agents required.

A strong solution of Nitrate of Silver, say twenty or twenty-five per cent., is one of the best applications for the *prevention* of hemorrhage after a "cautery dissection" operation, by coagulating the albuminous element of the tissue and thus forming a dense coating; but, *after* a hemorrhage has begun, the exuding blood dilutes it and washes it away so as to prevent its acting as it does when applied to a bloodless wound. It furthermore finds its way to the larynx and is thus distressing to the patient.

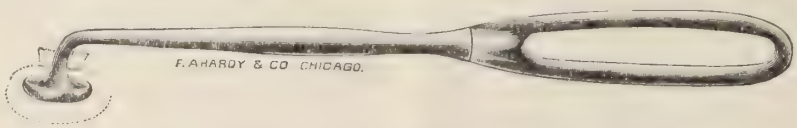

Fig. 1. Writer's Tonsil Presser. (One-half size.)

Continuous Pressure, efficiently applied, will probably control any secondary tonsillar hemorrhage to be met with, and is the most practical and surgical method of treating hemorrhage of this kind. This can be done with the thumb, it first being wrapped with gauze. There are special instruments devised for this purpose (Fig. 1) though any instrument shaped like a *placental forceps,* or even a *small pair of tongs,* can be substituted, both points being wrapped with gauze or muslin, and a continuous pressure made therewith. Strong pressure applied externally with the thumb on the carotid might also be tried.

Should it be possible by inspection to recognize a bleeding vessel, it should be *grasped with an artery forceps* and tortion applied, though, as before stated, bleeding for a tonsil wound is most often of an oozing character, and seems to come from the entire surface of the wound. As continuous pressure applied by the hand becomes tiresome to the physician, and very annoying to the patient, it is better to employ, if available, a tonsil hemostat as shown in Fig. 2.

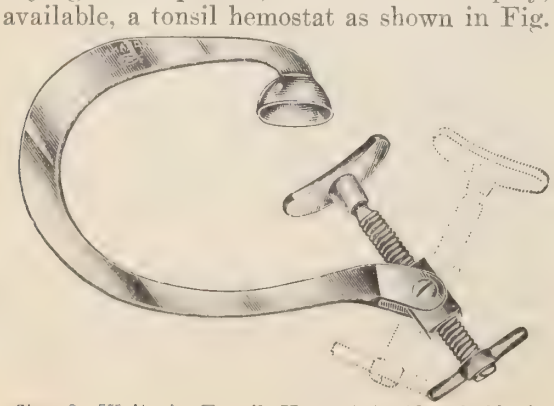

Fig. 2. Writer's Tonsil Hemostat. (One-half size.)

In any case where there has been a considerable loss of blood certain methods of systematic treatment should be employed.

Bandaging each limb near the trunk will diminish the amount of blood in circulation. If this is done one bandage at a time should be released, so the circulation of the limb will not be too long obstructed. In this way three limbs can be kept distended with blood.

Chloride of calcium given by mouth or rectum in doses of ten grains dissolved in two ounces of water, and repeated hourly for three doses, has been employed with benefit in case of persistent and oozing hemorrhage. After the third dose it should be discontinued for a few hours before being again used. Forty to sixty grains in twenty-four hours is regarded as the maximum dose as an anti-hemorrhagic. The lactate of calcium has also been advised, a single dose of thirty grains in water being given.

Hypodermatoclysis. Should the hemorrhage have been very severe it is advisable to administer a subcutaneous injection of normal saline fluid into the cellular tissue at the most favorable point, or else, as an alternate, a full enema (one-half gallon or more) of the same fluid may be employed.

103 *State St.*

BRIEF REVIEW OF ALCOHOL.*

By B. C. KEISTER, M. D., Roanoke, Va.

In this age of scientific progress we are confronted by many important problems, the proper solution of which requires the most careful thought and painstaking investigation.

*Read before the American Society for the Scientific Study of Alcohol and Other Narcotics, held in Washington, D. C., March 17-20, 1909.

A few months ago it was the writer's privilege and honor to attend as one of the official delegates that grand, scientific meeting held in this city (Washington), the International Congress on Tuberculosis, and to add his mite towards solving the great problem of eradicating from this country the curse of tuberculosis.

The great amount of good accomplished for humanity by this convention of liberal-hearted, broad-minded, scientific men of the medical profession, remains to be seen. But judging from the progress already made along certain lines during the few months that have elapsed since the convention, we may reasonably infer that a general revolution is now in progress, and that the day is rapidly approaching when the curse of tuberculosis will be driven from the face of the earth.

We are to-day confronted by even a greater problem than that of the "great white plague," and the solution of which demands greater effort, deeper thought and a more thorough investigation on the part of educated men and scientists. We have here a curse in disguise, "a wolf in sheep's clothing," that is making shipwreck of no less than 150,000 homes in the United States annually, and costing the United States for crime, pauperism, insanity, etc., no less than $1,884,027,982 yearly. We have in the United States at this time about three million hard drinkers, who have been taught and made to believe that alcohol, when taken as a beverage, is a mild stimulant and pleasant tonic.

From the above data, and a few scientific facts that will follow in this paper, you may be able, with some degree of precision, to get a partial view of the landscape that now confronts us.

In approaching this great subject with its varied and complexing avenues, over which so many of our older writers have travelled and stumbled, I cannot but feel my inability, as well as some degree of trepidation, in attempting to grapple with such a monster problem.

In our recent laboratory researches and clinical experience with instruments of precision in the scientific study of alcohol and its physiological action on the human system, we find it rather difficult to reconcile our more recent findings to the theories and practices of our forefathers. This, however, is quite natural when we consider the many disadvantages under which our older writers labored, in not having the laboratory training and equipment that are so absolutely necessary to make the proper research and scientific study of this subject.

Recent investigation clearly disproves the old theory of alcohol being a heart stimulant. It no longer lays any claim to its supposed power of augmenting the heart's action; on the contrary, it slowly depresses the action of the heart muscle and ultimately paralyzes both the muscle and the delicate nerves of the heart. This paralysis of the cardiac nerves largely accounts for the acute dilatation and fatal failure of this organ in persons who have taken large quantities of alcoholic drinks.

The common practice of administering some form of alcoholic liquid as a restorative in cases of fainting is contra-indicated, and the deception should be discountenanced by educated people. This rule applies with even greater force to cases of shock. Recent investigations have shown that alcohol administered in any form aggravates the conditions resulting from shock.

When taken into the system in any form, either as a medicine in small quantities or as a beverage at regular intervals, it acts in a very deleterious manner on the blood circulation by its paralyzing effect on the delicate nerves that supply the blood vessels, causing the latter to dilate or expand, and thereby admit a larger supply of blood, which is carried to the surface and outer extremities of the body, causing the heart to do an extra amount of hard pumping in order to keep the dilated vessels filled with blood.

This extra work on the part of the heart deceived our older writers and practitioners into the belief that this organ was stimulated by the alcoholic beverage when, in reality, it was made weaker from overwork and depressing effects of the alcohol on the cardiac nerves. Not only the cardiac nerves, but the great sympathetic system of nerves are more or less affected by the anesthetic and narcotic influence of the alcohol. It is a recognized fact in clinical pathology that tonic doses of alcohol are capable of paralyzing the vaso-motor centre and thereby causing dilatation of the blood vessels. Chloral is capable of producing these same results—clinical observation confirms all this. And it is a fact that when this condition exists in a person who

has been taking large quantities of alcoholic drinks he becomes very weak and pale; the arterial and venous pressure fails and the heart receives an insufficient supply of blood, the pulse soon becomes soft and very rapid and finally syncope supervenes.

These physiological effects of alcohol are more or less observable according to the quantity administered and the length of intervals between doses.

We also find, by clinical and microscopic observation, that by the constant though moderate use of alcohol, a hardening of the walls of the blood vessels ensues, which is soon followed by a thickening, due to an increase of fibrous tissue, which leads to a lack of normal elasticity and contractility on the part of the vessel-walls. We then have a delay in the blood current and finally a stagnation or stasis of the circulation. This condition may occur in any part of the body or in any of the organs, and is known as fibrous or fatty degeneration.

With this abnormal condition of the blood vessels in the brain, we may, on the slightest provocation, such as a sudden fright, a hearty meal, or anything that may cause undue agitation of the heart, have a rupture of a blood vessel, followed by paralysis or apoplexy. With this condition of the blood vessels of the liver and kidneys we may have such a change in the functions of these organs as will give rise to symptoms that are equally as alarming.

These pathological conditions, according to microscopic investigation, are brought about by no other cause, old age excepted, than alcoholic drinking.

It is a true saying that "a man is no older, no younger, and no stronger than his blood vessels."

We have a most deplorable condition of the vessels, the cells and walls of the stomach in persons addicted to the moderate use of alcohol, giving rise to the many and varied symptoms of dyspepsia, such as slowing the process of digestion by the destructive effects of alcohol on the pepsin of the gastric juice. It is claimed that one grain of alcohol is capable of destroying eight hundred grains of pepsin.

One of the well-known characteristics of alcohol is its power to extract water from any object with which it comes in contact. Hence its deleterious effect on the blood corpuscles, which contain 79 per cent. of water; also the gastric juice, which contains 97 per cent. of water; the pancreatic juice, which contains 90 per cent.; the saliva, which contains 99 per cent. water; bile, 87 per cent. water; muscle, 75 per cent. water; brain, 80 per cent. water, etc. It extracts the moisture from the five million little cells that supply the gastric juice to the stomach, and destroys the protoplasm of the epithelial cells of the lining of the stomach, and in so doing the functions of this important organ of digestion are almost obliterated. We find that the entire alimentary canal is more or less affected by this same destructive process; in fact, no part of the human structure escapes the destructive influence of this insidious enemy.

The brain and nerves being of a watery character (80 per cent. water) are rendered very susceptible to the influence of alcohol.

The microscope shows that grave alterations take place in the protoplasm of both the nerve cell and fibre, under the action of alcohol after it has been freely taken for sometime. It is a well-known fact that alcohol is a powerful protoplasm poison, it having a special selective affinity for the delicate cells of the brain and nervous system, with whose function and capacity it interferes even at a very early stage, and finally causes permanent gross alterations in the tissue, which are demonstrable to both the naked eye and by the microscope. A cell damaged in this way never recovers. It has been demonstrated by clinical observation that alcohol has been found pent up in small sacs in the brain in persons who have been chronic drinkers. It may be found in various quantities. "Enough alcohol has been repeatedly found in the brain of a dead toper to spoon out into an open dish and set on fire." We may have as a result of this accumulation of alcohol, pressure on the brain substance, giving rise to such diseases as apoplexy, epilepsy, delirium and insanity. The brain is hardened by the alcohol on account of its power of absorbing the water therefrom, causing a very marked disturbance in the transmission of thought and nerve force, impairing to a certain extent all the mental faculties. When we consider these pathological conditions of the brain and nerves, wrought by alcohol, is it any wonder that we have such an increase of nervous

diseases, insanity, epilepsy, feeble-mindedness, both hereditary and acquired?

Parental intoxication tends to produce impulsive degenerates and moral imbeciles. The brunt of the evil heritage caused by alcoholism falls upon the nervous system of the next generation. It may not always be recognizable immediately, although during early infancy impaired nerve vitality frequently shows itself in convulsions, meningitis and other forms of nervous debilities. Many children of alcoholic parentage show signs of stupidity, mental deficiency, moral instability and lack of normal control, while others exhibit idiocy, epilepsy and hysteria, together with various abnormal cravings.

In a single reformatory school in the city of Berlin, hereditary taint due to parental alcoholism is shown in 67 per cent. of all the pupils. Public attention is now being directed to the "problem of the feeble-minded," and those who have devoted most attention to the subject regard alcohol as certainly one of the most prolific causative factors in the deterioration of brain-tissue, which lies at the real root of the mental inability and feeble-mindedness of so many human beings of this, the twentieth century civilization. Of the 55,000 school children examined in New York city in 1901 by Dr. MacNicholl, 58 per cent. were below the required standard of intelligence—17 per cent. being actual dullards, bordering on imbecility. The family histories of 3,711 of the children were traced through three generations. This was done in great detail with regard to the taking of alcohol. Of the children of abstaining parents and abstaining grandparents only 4 per cent. were dullards, whereas of the children of abstaining parents, but drinking grandparents, 78 per cent. were dullards or feeble-minded.

"Mrs. M. J. Armable, of Brooklyn, vouches for the record of one woman who was reared in the atmosphere of the saloon and its environment of immoralities, who died a few years ago at the age of fifty-one. Her descendants were traced from 1827 to 1902 and numbered in all 800. Seven hundred of these were criminals, 342 were confirmed drunkards, 127 were prostitutes, and 37 were murderers, and were executed for their crimes. This woman, through her progeny, cost the United States $3,000,000."

If one-half of the money expended for the mental degenerates, idiots, imbeciles, epileptics and paupers caused by alcoholic drinking was properly spent toward the prevention of these conditions, we would not only save millions of dollars, but, in addition to this, we would soon have a healthier and more refined generation.

Our friends of the "Fatherland," the Germans, have made some recent pathological discoveries resulting from the much beer drinking of that country. It is known among the physicians connected with the large hospitals of Germany as "Beer-Drinkers' Disease," and is recognized by a special condition of unhealthy enlargement of the heart, due to dilatation, accompanied by some increase of tissue and fat.

It is reliably reported that one in every sixteen of the hospital patients in Munich dies from this disease.

Since beer-drinking has become so popular in the United States during the past quarter of a century, we may anticipate about the same results. In fact, when we consider the greater quantity of the stronger drinks to which the American people are addicted, we may expect a higher rate of mortality among the beer-drinking classes of this country.

This disease manifests its worst symptoms in persons between the ages of forty and sixty years. It is not generally realized by the laity that such small amounts of alcohol taken in the form of lager beer and other soft drinks is fraught with so much danger, but it is nevertheless true, as well as appalling to think of. At such an age a man should be at his best, both mentally and physically, and with prospects of a good old age. The loss of such men to the community in which they reside is incalculable, when we consider the deplorable fact that many of our most prominent citizens and leaders of men are numbered among the beer-drinkers of our country.

In considering the matter of national physical proficiency as well as national pride, steps of a most radical character should be taken toward removing the cause of these abnormal conditions.

When we consider the high standard of mental and physical requirements for military service of some of the other progressive nations, it is high time for our federal government to take cognizance of these facts and conditions.

It is thought by some of our learned think-

ers that with a continuance of our present rate of deterioration, both mentally and physically, as a nation, it will be only a matter of time when we will be classed with France, Italy, Spain and some other wine and alcoholic drinking nations of the earth.

It is a well-known fact that this marked deterioration on the part of the wine and beer-drinking nations is now provoking the most lively consideration by educated men and heads of these various governments.

The most careful investigation reveals the fact that alcoholic beverages are no longer entitled to a place in the army or navy, in the camp or on the field of battle. It is now recognized by our best authorities on military matters that the most severe exertions can be best endured, either in cold or hot climates, without any form of alcoholic drinks. It is a most significant fact that the Boer army withstood the long siege of warfare with England and displayed their wonderful power of endurance over their warm-blooded antagonists, without spirituous drinks of any kind.

On the English side we have the comments of Sir Frederick Treves, who commanded the relief column of 30,000 soldiers that marched on to Ladysmith during that extremely hot weather when so many of the soldiers lost their lives on account of the great humidity and extreme heat. He remarked that the first men who dropped out of the ranks of this enormous column "were not the tall men or the short men, not the big men or the little men—they were the drinkers, and they dropped out as clearly as if they had been labeled with a big letter on their backs."

It was claimed by some of our older writers that spirituous drinks relieved fatigue and made privation more endurable. This, in measure, is true, when applied to the drinker and to the coward who does not measure the extent of the danger to which he is exposed, and on that accounts scorns the thought of danger. In the earlier times, when the method of fighting was to run down the antagonist by a wild dash, alcohol no doubt had its devilish effects on the brain. But modern scientific warfare has other features to reckon with—tranquility, cool deliberation, iron endurance, a steady hand, a clear eye, a quick decision, etc., are some of the necessary qualifications which the warrior of the present day must possess in order to make the rifle in his hand a formidable weapon. He must be imbued with courage and loyalty that springs from love of family and country, and not with the drunken tumbling into danger with which one whose brain is clouded with alcohol rushes into battle.

As previously intimated, in considering the enormous fact that we have in the United States over three million hard drinkers whose ages vary about as much as the ages of those who are now enlisted in our navy and standing army, saying nothing of the millions of young and middle-aged moderate drinkers of this country who are following in the footsteps of their parents and grandparents, and who will be followed by their children and grandchildren, is it not about time for the scholar and scientist to speak out a warning note of no uncertain tone? Should we not, as a convention of broad-minded citizens and conservators of the public health and public weal, make a bold effort toward arousing the slumbering senses and open the eyes of our federal government to the stern realities of the picture that now confronts us as a nation?

In conclusion, permit me to present for your serious consideration a few side pictures in the form of statistics that continue to "bob up" in the background demanding attention:

First, we have now in the United States 3,640,000 hard drinkers of alcoholic beverages, 125,000 of whom die annually from the direct effects of alcohol; over 5,000 of these take their own lives.

Second, during the past four years alcohol killed more people in the United States than were killed by bullets during the four years of our Civil War. In 1907 there were 10,782 suicides in the United States.

Third, the use of alcohol as a beverage costs the United States annually $1,200,000,000.

Fourth, Seventy-five per cent. of crime, 75 per cent. of the pauperism and 5 per cent. of the insanity of the United States are caused by alcohol.

Fifth, seventy-five per cent. of the diseases of fashionable life are caused by alcoholic beverages.

Sixth, forty per cent. of all diseases of the liver and kidneys are caused by alcoholic drinks.

Seventh, sixty per cent. of the inmates of all reformatory schools are the descendants of par-

ents or grandparents who were addicted to the use of alcohol.

Eighth, sixty per cent. of all the imbeciles and epileptics of the United States is caused by the hereditary effects of alcohol.

Ninth, in 1905 the amount of alcoholic beverages consumed in the United States was 1,694,392,765 gallons; 1,494,191,325 gallons were lager beer.

Tenth, in the year 1890 the liquor traffic paid the United States treasury $157,485,982. It cost the people of the United States, directly and indirectly, $1,884,027,982.

The late Mr. Gladstone made the emphatic statement that alcohol was a greater curse to any nation than war, famine and pestilence combined.

Notwithstanding this array of scientific facts and figures, our Federal and State governments continue to issue licenses for the sale of a poisonous beverage that is slowly, but surely, detroying our nation.

SACRAL HEMATOMA; SPINA BIFIDA CONVERTED INTO HEMATOMA DURING BREECH PRESENTATION; THE TUMOR PRESENTING.*

By E. T. BRADY, M. D., Abingdon, Va.

We are all familiar with the ordinary neck

hematoma complicating labor—harmless, and amounting to but little, but I have never seen any reference to one except on the neck. This is a sacral hematoma, differing in nowise from the ordinary neck hematoma. The tumor presented, and was supposed to be the ordinary bag of water. An attempt was made to rupture it, which was fortunately not successful. The tumor weighed nine ounces, the baby four and one-half pounds. Labor was not complicated in any other way. The tumor was removed after birth, and in three weeks has not refilled, and the child is perfectly normal.

*Read before Medical Society of Virginia during its 39th Annual Session, at Richmond, October 23, 1908.

MEDICAL ORGANIZATION AND ITS BENEFITS.*

By V. V. ANDERSON, M. D., Lynchburg, Va.

In the few years during which I have been engaged in the practice of medicine I have been forcibly impressed with the need of a more thoroughly organized profession, and especially is this need a great one here in Virginia. Certainly modern medicine is altruistic in its ideals, and can boast the noblest workers the world has had—men whose lives are an inspiration, who loom up as giants when man's duty to his fellow-man is the test. Think of the countless millions of lives saved to glorify the work of the immortal Jenner! The debt the world owes to Lister and Pasteur endless generations cannot repay. And Reed, Carrol

*Read before the South Piedmont (Va.) Medical Society, at South Boston, Va., April 20, 1909.

and Lazear—surely no man hath greater love than this, that he gave up his life for another. The comparison of the results of the work of these men with that of the great generals and statesmen of the past gives them an everlasting tablet in history and an underlying reverence from humanity; and yet members of this, the noblest of professions, the best and the most charming of men, who do more for the poor, more actual Christian charity, every day in every year, than all other sources combined, live in peace and love with everybody in the community except each other. Envy and jealousy, those twin monsters sprung from the Evil one, have dominated our profession for ages, and made its dissensions a by-word and term of reproach in common speech and literature. So that the great and noble self-sacrifice daily exhibited by physicians—members of the only existing profession whose one object is by proper education, preventive measures, etc., to eliminate disease, and do away with that which enables them to make a living; who work in reality to raise the public health to such a standard that their services may eventually be dispensed with—this self-sacrifice is frequently unappreciated and their noble efforts often misunderstood.

Why is this? What is the trouble? Why should the best of men be so habitually on bad terms with each other? Why this loss of public respect and confidence? Else these osteopaths, Christian Scientists, chiropractors and quacks of all sorts, would not reap such a rich harvest. Why these difficulties in securing needed medical health legislation, and enforcing such laws when enacted? The fault lies with us, and, fortunately, the remedy also.

Most individuals who live apart from their fellows are sensitive and suspicious. The rivalry between bankers was proverbial until the "community of interests" idea induced systematic organizations. The condition of the ministry was worse until the day of ministerial associations, with weekly meetings and opportunity for acquaintance and agreement on matters of policy and public concern. Similar conditions could be found in studying the history of other vocations. The legal profession is a notorious exception. Coming into daily contact with each other in the court-rooms, they learn to overlook the shortcomings, and appreciate the virtues of their fellows. Hard words that physicians would treasure up for years are quickly forgotten.

We have in the local county medical society a permanent organization which will give the same opportunity for acquaintance, comradeship and improvement that we find in the more favored vocations, such as law. Physicians, meeting together under such conditions become broad-minded and more tolerant of the views of others. Here the average physician will recognize his own shortcomings and the abilities of his fellows. It is here the stimulus will be received for study and investigation. Here we have at our very door the possibilities of the very best post-graduate work, a school in which the members, through mutual help, can continue the education which was simply begun in the medical college—each year getting out a new edition of themselves. It is here we have the best prevention for local jealousies. Few of us are as bad as we are painted by our enemies, and if a little time be given to sociability, fraternizing, and to this be occasionally added a smoker or a luncheon, the results will be surprising.

But, aside from these very important objects, there are higher and more useful ends the Society may be made to observe. Public health questions must be considered. Not only the prevention and restriction of ordinary communicable diseases, but the complex problems of life in city, town and country must be met by the medical profession. An educated public sentiment must be originated and directed by the medical profession if we are to benefit by the knowledge that has been gained along the lines of preventive medicine. Knowing, as we do, that typhoid fever and many other diseases are not so much diseases as crimes, it is our duty to so arouse the public mind that this dreadful sacrifice of human lives will be stopped, and those diseases that are really preventable may be totally stamped out. Surely, we would earnestly urge upon authorities the necessity of killing a monster that was sacrificing the lives of many thousand human beings yearly. How much more urgent the necessity of killing this invisible monster that steals so insidiously upon us, taking away our friends, our relatives and dear ones.

Not the least important of the medical

society is the business feature. The day has passed when a physician can be very poor and still a blessing to his community. The wonderful advances in modern medicine and surgery demand that he keep awake and up to date. To do this, money is required. The financial failure is a danger. Rate cutting, low prices, instead of benefitting the public, are fruitful sources of public danger, as they necessarily pauperize the medical profession, hampering it in its proficiency.

I have already touched upon the fraternal side of the society work. This is a feature, however, that I want to most emphatically impress upon you. We simply cannot appreciate the far-reaching value of medical associations and fellowship, of medical comradeship, to be told that our work is good, and to be counseled to do so and so, to use some better remedy next time, to have some friendly shoulder at our back, some steady, friendly beacon marking a safe course for us over a troubled sea.

Such an intimate association of physicians into a county medical society is a crying need in every country of our noble Commonwealth. Here, of all other places in the Mother of States, with the most glorious history of all, rich in the possession of sons, noblest among men, our profession is notoriously behind in the great wave of organization that is spreading over the entire country. It is time for us to awake. Conditions are not the same as they were in the days of our grandfathers.

The medical profession has great economic problems which must be met. How have we met the license tax during the past few years? Had we a strong State association, and connected with it, a strong county association in every county in the State, the problem would have been worked out with the greatest ease at the home counties of the legislators.

Are we doing our duties as leaders, as public teachers, giving the public the knowledge they are willing and anxious to receive with regard to preventable diseases, with regard to the moral question, to patent medicines, urging upon them the inspection of schools? Are we doing our duty in protecting them against charlatans—those wily fanatics that call themselves osteopaths and Christian scientists, being neither Christians nor scientists, but green goods men and women of the purest water? I say, are we giving the public their due? The trouble lies not with the newspapers, not with the easily led mind of the public, but with us, its teachers in medical matters. Our condition in Virginia to-day is characterized by a lack of organization, no connection whatever between our State and local societies. Whatever energy there may be in either is lost by there being no co-operation whatever between the two. The State Society meets only once a year. Very little, after all, of real value to the public and the profession can be accomplished during its short session, and without local organization over the entire State, inseparably connected with it to carry out its work, much good is very slowly and with great difficulty accomplished. With the county society, however, meeting once every month, or every week, or possibly every day, all the vital questions affecting each community may be successfully worked out. Definite lines of study can be taken up, operative work on animals, microscopic study of viscera, secured from slaughter houses, pharmacologic investigations, etc., can be best secured in the larger medical centers and put right in the hands of every practitioner in this State.

And why should not this be done? Our patients have a right to demand the best, and surely we should not be satisfied with less. Think of the possibilities of good of such an organization in every community in the Commonwealth, backed up by a strong and live State Society, with a mouthpiece in the form of a wide-awake State journal. Should we want needed medical legislation, we could have it. Should we want to protect the honest physicians, but most of all, the credulous public against imposition in the form of osteopaths, chiropractors, prescribing druggists, etc., we could do so. Should we want more and better hospitals, we could have them. In short, the medical profession of Virginia have it in their power to direct public opinion in matters medical, and secure the best, as many other States are doing, if they only wish to. If you will spend just as much energy and thought in building up and properly organizing our profession as you do in objecting to and finding fault with every new suggestion for its benefit, the most difficult part of the problem will already have been solved.

To sum up: Let me urge the great importance of the county medical society. As the

family is recognized as a unit in its political, moral and social organization by society throughout the world; as the family is the foundation of the whole structure upon which modern civilization is built, so in our great scheme of medical organization, the home society is the unit upon which its super-structure rests. If the home or county organizations are weak, doing no practical work, filled with dissensions and jealousies, opposed to all plans for the more thorough organization of our profession, the elevation of its standards, and the noble purpose of the more perfect performance of its duty to the human race, then little can be expected from the district and State organizations.

Book Notices.

Essentials of Medicine. By CHARLES PHILLIPS EMERSON, M. D., Late Resident Physician Johns Hopkins University, etc. Illustrated by author. Philadelphia and London. J. B. Lippincott Co. Small 8vo. 383 pages. Cloth.

The author, now Superintendent of Clifton Springs Sanitarium, New York, realized the need of such a book as this while an instructor at Johns Hopkins University. The student, it would appear, could better give debatable theories of disease than plain practical definitions. It is singular how far short of the truly practical are many of the text-books of the day. To meet the needs of beginners in the study of the practice of medicine this book is specially intended, and it does so admirably. It is a book even for the practitioner to read, and is particularly valuable to the college professor in giving a clear-cut definition and graphic description of a disease upon which he proposes then to lecture. It is, in reality, a book that relates to the *essentials* of medicine.

Principles and Practice of Physical Diagnosis. By JOHN C. DaCOSTA, Jr., M. D., Associate in Clinical Medicine, Jefferson Medical College. Philadelphia, etc. With 212 original illustrations. Philadelphia and London. W. B. Saunders Co. 1908. 8vo. 548 pages. Cloth, $3.50 net.

There is an every day demand by practitioners for such a book as this—whether in his rounds in families, or office work, or examinations for life insurance, etc. Perhaps a little more useful scope could have been given the work had the author added fuller sections on symptomatology, so as the better to have recognized the true nature of the disease which has even striking or nearly characteristic physical signs. But, judging the book according to its title, it well supplies the data on which diagnosis by physical signs or conditions can be made.

Text-Book of General Bacteriology. By EDWIN O. JORDAN, Ph. D., Professor of Bacteriology, University of Chicago and Rush Medical College. Fully Illustrated. Philadelphia and London. W. B. Saunders Co. 1908. 8vo. 548 pages. Cloth, $3.50 net.

Bacteriology, of every day utility to the practitioner, has become so large and technical a science that it is impracticable for the general doctor to retain in memory the details essential to it. Hence, he has to refer to books on the subject very much as a literateur uses his dictionary. Dr. Jordan, in addition to collecting and tabulating important facts diagnostic of the different bacteria, etc., also, in the body of the text, presents the subjects in as readable a form as we have ever seen it done; so that the doctor, without presuming to be an expert bacteriologist, can easily appreciate the teachings as bearing on familiar diseases. For the laboratory specialist the book is well arranged and the technique throughout is very thorough.

International Clinics—a Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles. Edited by W. T. LONGCOPE, M. D., Volume I. Nineteenth Series. 1909. 8vo. Pp., 307.

This volume contains articles by well recognized authors—on treatment, medicine, surgery, gynecology and obstetrics, genito-urinary diseases, proctology, rhinology, dermatology and pathology. It seems unfortunate that one of the writers undertakes to use a proper name as the name of a diseased condition: "Mickulicz's disease," we venture to say will not be recognized by many practitioners as referring to "enlargement of the lachrymal or salivary glands." Names should be used that are at least partly descriptive of the condition. Beyond such a note, this quarterly is well up to date, and contains articles and abstracts which are of much real value.

Text Book on Materia Medica, Pharmacology and Therapeutics. By GEORGE F. BUTLER, A. M., Ph. G., M. D., Professor, and Head of Department of Therapeutics, and Professor of Preventive and Clinical Medicine, Chicago College of Medicine and Surgery, etc. Sixth edition. Thoroughly revised and enlarged, and adapted to the 1905 U. S. Pharmacopoeia. Philadelphia and London. W. B. Saunders Co. 1908. 8vo. 708 pages. Cloth, $4; half Morocco, $5.50, net.

Few books have better stood the trial of time than this. As a college text book, its arrangement is such as is generally needed.....the first 138 pages being given to the subjects of Pharmacology and General Therapeutics and to Pharmaceutical Preparations in general, such as solutions, liquid mixtures, extractive preparations, solid mixtures for internal use, preparations for external use, etc. Then follow descriptions of drugs whose chief action is on the nervous system, on the circulatory organs, etc. In short, the arrangement takes in order those remedies whose chief action is on special systems, and their incidental other uses are mentioned. A good chapter is on organotherapy. A practical chapter is on Prescriptions; and it would repay every practitioner to read this, as it would save him from many blunders. The general index covers twenty-five pages, and the Clinical Index, which is full of suggestions as to the selection of remedies for special conditions, covers over thirty double column pages. This is a valuable text book for the student, and guide book for the practitioner.

Annual Report of Surgeon-General U. S. Public Health and Marine Hospital Service for Fiscal Year 1908. Washington. Government Printing Office. 1909. 8vo. 220 pages. Cloth.

This report is as full of interest for the general practitioner and hygienist as for the Government officials. Much space is given to the Plague, means of prevention, etc. A good deal of scientific research has been devoted to vaccines, antidiphtheritic serum, antitetanic serum, etc. Leprosy also receives attention. In short, beyond the strictly official part of the report, it contains much valuable information. We presume a copy can be had on request by any one specially interested.

Text Book of Medical Chemistry and Toxicology. By JOHN W. HOLLAND, A. M., M. D., Professor of Medical Chemistry and Toxicology, and Dean, Jefferson Medical College, Philadelphia. Second edition, revised and enlarged. Philadelphia and London. W. B. Saunders Co. 8vo. 655 pages. Cloth, $3 net.

As compared with the former edition, this is practically a new book, in keeping with last edition of U. S. Pharmacopoeia, and also with latest advances in physiologic chemistry. The latest improvements in urinary tests are described. A section is given to the chemistry of foods and their changes in the body. The pages given to drinking water for cities, etc., are very useful. Not only for strictly technical uses as a chemist is this book valuable, but to the general practitioner it is especially so as a book for frequent practical reference. The toxicological part makes it valuable to the coroner, the druggist, the physician, etc. No text book we are acquainted with is more serviceable for the clinical classes in medical colleges, etc. Withal, the low price—$3—is very enticing.

Saunder's Pocket Medical Formulary. By WILLIAM M. POWELL, M. D. Ninth edition. Thoroughly revised, enlarged and adapted to Eighth (1905) Revision U. S. P. Philadelphia and London. W. B. Saunders Co. 1909. Flexible Morocco, with side Index, Wallet, Flap, $1.75 net.

This "Formulary" is said to contain 1831 formulas from the best known authorities on the diseases alphabetically named. The appendix contains posological tables, formulas and doses for hypodermic medication, a list of poisons and their antidotes, diameters of the female pelvis and fetal head, an obstetric table, diet lists, materials and drugs used in antiseptic surgery, notes on treatment of asphyxia from drowning, surgical remembrancer, tables of incompatibles, diagnostic points as to eruptive fevers, etc. The addition of an index or a full table of contents would be an improvement.

Constipation and Intestinal Obstruction. By SAMUEL GOODWIN GANT, M. D., LL. D., Professor of Diseases of Rectum and Anus, New York Post-Graduate Medical School and Hospital. With 250 illustrations. Philadelphia and London. W. B. Saunders Co. 1909. 8vo. 559 pages. Cloth, $6; half Morocco, $7.50.

As we read this book, we are reminded of a peroration by a distinguished gynecologist in some remarks on constipation in woman. After exalting the noble character of the true woman —as mother, wife, daughter, companion, etc.,

he fell from the sublime to the ever impressive ridiculous by remarking that if he were asked to answer professionally as to the highest duty of woman he would say: "Serve God, and *keep her bowels open.*"

Dr. Gant is a proctologist of deserved eminence. The subject of his book is one of daily concern to patients and doctors. But he has been a little peculiar in meeting with so many cases of constipation that are *not curative* by medicinal preparations, diet, habit of going to stool, psychotherapy, etc., or else the most of the profession of general pratitioners have been remarkably fortunate in not needing resort to other means for the relief of the condition. No one denies the need of surgery for such states as intersusception, invaginations, etc.; but extended experience as a general practitioner of over forty years proves that these conditions are by no means frequent occurrences. Of course, for mechanical obstruction of the bowels, surgery is generally required. But as a rule, proper instruction of the patient as to regular hours for stools, proper daily physical exercise, massage, taking time to think daily of the need of attention to the bowels (psychotherapy), and if necessary, the use of some such preparations as are spoken of on pages 299-320, and others will prove sufficient.

With reference to the various ptoses, etc., spoken of on pages 498-509, we are surprised that no mention is made of palliative treatment by the use of certain abdominal supporters, such as the "Storm," and others. Many patients live in comfort by adopting them.

Such remarks, however, should in no way be taken as condemnatory of the book. It is really an excellent and most instructive work; and in all that pertains to diseases of the anus, rectum, etc., it is authoritative. If simply some of the radicalism of the advice as to treatment were modified, it would be an ideal authority, according to the title of the volume. Illustrations of conditions and of procedures as to examinations, operations, etc., are fully graphic, and the text is well descriptive.

Transactions Medical Association of State of Alabama, 1907 and 1908. 8vo. Cloth.

These volumes, issued in excellent style, and full of papers of merit, are published by the State Printers and Binders. The 1907 session was held at Mobile and the 1908 session at Montgomery, April, 1908. The volumes are issued nearly a year after the sessions. It seems that the cost of Councillors in this Association is $10 each; of Delegates $5 each; and that in addition the several County Societies composing the Association are assessed various sums from $4 to $200.

Editorial.

The House-Fly a Dangerous Infection Bearer.

The Merchants' Association of New York has issued a unique, impressive and useful quarto-pamphlet of forty-eight pages, pointing out the dangers of the ordinary house-fly as a disease breeder. As conclusively proven as it is that one species of mosquito is a malarial fever disseminator; that another is the cause of yellow fever, etc., it is as conclusively proven that the ordinary house-fly communicates typhoid fever germs through food to individuals, as also tuberculosis and other grave infectious diseases.

The house-fly is about the filthiest of the constant companions of the human race. It feeds on the manure piles, the excrement of man, the sputa of diseased persons, etc.; and then, as regularly as the person takes his meals, the fly comes into the dining-room to breakfast, dinner and supper with him—depositing its filthy excrements on the surface of milk, soups, foods, etc., that the person may be about to take. Thus the individual takes into his stomach not only the nourishing food, but also the disease-bearing bacteria which the fly has deposited on it. Bulletin No. 51 of the Agricultural Experiment Station at Storrs, Connecticut, shows that a single fly contains from a few hundred to several millions bacteria. "Early in the fly season, the numbers of bacteria on flies are comparatively small, while later, the numbers are comparatively very large."

The pamphlet issued by the Merchants' Association represents the house-fly as under trial by a court. Any number of eminent authorities are witnesses, and the jurors are men of observation. The verdict is "guilty," and the court passes sentence of death to the extermination of all flies. "Kill every fly that strays into the sick-room." Avoid accumulation of decaying material of any sort on or near one's premises. All fermentative waste, such as bedding straw, paper waste, vegetable matter, etc., should be

disposed of, or covered with lime or kerosene oil. Screen all foods. Keep garbage receptacles carefully covered, and cans cleaned or sterilized with oil or lime. Keep stable manure in vaults or pits, screened or sprinkled with lime, oil or other cheap preparations. Keep the sewage system in good order, seeing that it does not leak, and is not exposed to flies. Pour kerosene into drains. Cover food after meals; burn or bury all table refuse. Screen all foods exposed for sale. Screen all windows and doors —especially of kitchens and dining-rooms. Burn pyrethrum powder in the house to kill the flies. Remember, the breeding places of flies is in nearby filth—it may be behind the door, under the table, or in the cuspidor. If there is no dirt or filth, there will be no flies. Tell the Health Department of all nuisances in the neighborhood. Such are the instructions of the court of investigation on the subject.

It would be most desirable if this pamphlet could be reproduced in every town and city for general distribution and reading by the citizens. It is not so much that new facts concerning the dangers of the house-fly are brought out, as the most striking, impressive way in which the facts are stated. Whoever can should hasten to secure a copy and read this pamphlet.

Commencement Exercises of the Richmond Medical Schools.

If the handsome leather-bound invitations issued for Commencement Exercises by both the University College of Medicine and the Medical College of Virginia could be criteria by which to measure the capabilities and general standing of the new graduates, anxiety as to results before Medical Examining Boards, or as to future success, might well be cast to the winds. Fortunately, the standards maintained by both schools have been of a high order, and the graduates have ranked well everywhere.

The *University College of Medicine* held its Final Exercises May 16-18. Rev. R. W. Forsyth, D. D., preached the annual sermon at St. Paul's Episcopal church on the 16th; the annual meeting of the Alumni Association was held on the night of the 17th, immediately after which a reception was given by Dr. Stuart McGuire; on the 18th, the Alumni Association was further entertained at a smoker and this was followed by an Address of Welcome; at night, the exercises proper were held at the Academy of Music, when diplomas were delivered to the graduates in medicine, denistry, and pharmacy, and hospital appointments announced. Hon. Jos. D. Eggleston, Jr., State Superintendent of Public Instruction, delivered the address of the occasion. A reception by the Faculty at the Westmoreland Club concluded the exercises for session 1908-1909.

The *Medical College of Virginia* Commencement Exercises began on May 16th with the Baccalaureate Sermon by Rev. H. D. C. Maclachlan, at the Seventh Street Christian church. Clinics and Demonstrations were given at the Memorial Hospital on the two succeeding days, with class reunions on the 17th, and with a luncheon and business meeting of the Alumni Society on the 18th. A scientific session of the Alumni Society was held on the 19th, the subject for discussion being Lithemia. At the Academy of Music at night, Dr. George H. Denny, President of the Washington and Lee University, was Final Orator, the delivery of diplomas in medicine, denistry, and pharmacy, and announcement of hospital appointments, bringing the year's work to a successful close.

Medical Examining Board of Virginia.

The Medical Examining Board of Virginia will meet at Richmond, Va., June 22-25, 1909, for the examination of parties proposing to practice in Virginia. Full information can be obtained by addressing the Secretary, Dr. R. S. Martin, of Stuart, Va. Dr. Rawley W. Martin, Lynchburg, is President.

During this June session of the Board, the following, introduced by Dr. R. B. James, of Danville, at the semi-annual session last December, will be acted on:

Resolved, That the examination papers of a candidate who takes the partial examination shall be graded and marked as passed or failed to pass, according as he makes 75 per cent. or less on such subjects as he may be examined on before graduation. On the final subjects on which he shall be examined after graduation he shall be required to make an average of 75 per cent.

During the December semi-annual session Dr. Herbert Old, of Norfolk, offered the following amendment to the By-Laws, also to be acted on during the June, 1909, session.

Resolved, That by-law No. 4 shall be amend-

ed to read as follows: A total average of 75 per cent.—that is, 675 points—shall be necessary to license a candidate (he or she having otherwise complied with the law); provided, that in no one section shall the percentage be less than 50 per cent.; if so, the applicant shall be rejected regardless of the total average.

This amendment to go into effect at the June examinations of the year 1909.

The Association of Norfolk & Western Railway Surgeons

Held its annual session at Cincinnati, Ohio, May 4. Norfolk, Va., was chosen as the place for 1910 session. Dr. S. S. Halderman, Portsmouth, Ohio, is President elect, and Dr. T. M. Baird, Crewe, Va., is Secretary-Treasurer. During the banquet, the President of the Railway Company, L. E. Johnson, discussed the policy of the Company, urging its surgeons in law suits, to give their unbiased opinion, even though the railroad might be in fault. He emphasized the importance of fair treatment to the patrons of the Company. Among other speakers in the same line was Dr. Joseph A. Gale, of Roanoke, Va., Chief Surgeon of the Railway, who has long been eminent in his special field—even an exemplar for Chief Surgeons of other railroad companies of the country.

The Southside Virginia Medical Association

Meets at Petersburg, Va., June 8th. This Association is composed of doctors from the counties of Sussex, Surry, Southampton, Prince George, Brunswick, Greensville, Dinwiddie and the city of Petersburg, and while this territory is represented by seventy members, there are yet a number of eligibles without the fold. It is hoped that members will interest themselves sufficiently in such outsiders as to induce them to join.

Dr. R. A. Martin, Health Officer of Petersburg, was chosen at the Lawrenceville meeting to read the paper for general discussion on this occasion. A number of other papers have been promised, and the program will be up to its usual standard of excellence. Dr. E. F. Reese, of Courtland, is Secretary.

The Georgetown Clinical Society

Celebrated its fourth anniversary with a banquet at Rauscher's, Washington, on April 26th. Covers were laid for one hundred. Before the banquet, papers were read by Drs. William A. White, of the Government Hospital for the Insane; George M. Kober, Dean of the Medical School, and Thomas Neill. Following the reading of papers, members of the Faculty of Georgetown University Medical School were summoned before an "examining board," and ludicrous questions propounded, with two minutes in which to answer. A musical program was included in the evening's entertainment.

The American Proctologic Society

Will hold its eleventh annual session at Atlantic City, N. J., June 7-8. The profession is invited to attend these meetings. The preliminary program gives a list of thirty-one active members, and papers will be read by twenty-six of that number—practically each man being a specialist and author along this special line of work. Most of the subjects treated, however, will be of interest to doctors generally.

The Northern Neck Medical Association

Held its semi-annual session at Warsaw, Va., May, 1909, Dr. M. M. Walker, of Montross, presiding. Dr. A. C. Fisher, of Emmerton, was elected President for the ensuing year. The next meeting will be at Kilmarnock, December, 1909. Dr. R. O. Lyell, of Warsaw, is Secretary. Assistant Commissioner of Health, Dr. Freeman, of Richmond, Va., delivered an address on "Sanitary Conditions."

Dr. R. S. Powell,

Of Woodview, Brunswick Co., Va., has finally consented, after a siege of insistence by many friends, to stand for re-election to the Virginia House of Delegates.

Dr. Powell has served many terms in the Legislature, and has always been active in his efforts to advocate measures intended for the good of the medical profession, as well as for his District, and the State at large.

State Special License Taxes on Doctors.

Encouraging reports are coming in from all parts of Virginia as to probable success of the "Repeal Bill" before the next Legislature. However, apparent indifference on the part of a few can be magnified by hostile legislators into sufficient excuse for many opposing votes.

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Original Communications.

INSANITY: THE HOME TREATMENT OF THE PATIENT.*

By PRESSLY C. HUNT, M. D., Washington, D. C.
Neurologist, Providence Hospital, etc.

The erroneous belief that insanity and unsound mind are one is still prevalent. In insanity, while disorder of the mind exists, it is not the most important feature. The most prominent feature in insanity is disorder of conduct by which the disorder of the mind is expressed and made known. We form our judgment of a person's sanity or insanity largely by his actions. Disorder of the mind can never be distinctly observed.

No practical definition of insanity has been formulated, owing largely to our incomplete knowledge of the disease. Every alienist has a more or less complex definition which he offers when a definition is required. The least objectionable one that I have seen is: "Insanity is a disorder of the mind due to disease of the brain, manifesting itself by a more or less prolonged departure from the individual's usual manner of thinking, feeling and acting, and resulting in a lessened capacity for adaptation to the environment." The peculiar and proper function of the highest regions of the brain is the relation of the individual to his environment; one part of this function is to receive from the world such impressions which so act on the brain that the mind gains information of what is going on in the world; the second part is the action of the mind causing bodily movements adapted to the state known through the medium of the senses; and a further function is the governing of the regions of the body.

It appears from the above that the highest regions of the brain are primarily disordered in insanity, and that the principal function of these regions is to determine and actuate conduct; also, that the bodily functions will be likewise more or less deranged. It therefore may be stated that the symptoms of insanity are threefold:

First. Disorders of conduct.

Second. Disorders of bodily function; and,

Third. Disorders of mind.

That all these symptoms are present in every case of insanity, although each class of disorders is not equally prominent, goes without saying.

In a general way, the symptoms of the several forms of insanity are more or less constant. With certain delusions we often have certain defects in the movements of the pupil of the eye, alteration of speech and gait; with another class, a tendency to homicide; another class, a tendency to suicide. Epileptic convulsions so slight in nature as to escape observation may be followed by "post epileptic automatism." Acts in this state are termed automatic; that is to say, they are acts that from constant use are performed with a minimum of deliberation, attention and volition, and, peculiarly, being that they almost always differ from normal acts in their lack of direction and purpose. The condition may be disguised by the habitual nature of the act and its unintelligent character; that is, a clerk will pick up any object resembling a pen and go through the motion of writing; if he happens to pick up a pencil, and paper is lying on the table, he will cover the paper with unintelligible figures.

Disorders of conduct that characterize insanity are most diverse; they may be crude acts or simple means that obtain the object of their desire, or elaborate acts which seek indirectly through a connected series of events the desired end. The acts are an index to the intelligence of the person. Conduct, if disordered, is excessive or defective in amount. It is always dis-

*Read before the Medical Society of the District of Columbia, May 19, 1909.

turbed in insanity, usually a combination of defect and excess. It is more marked in the more elaborate acts which are first and most affected, and they are the last to return to the normal on recovery.

Mind is an incident in and a means towards the achievement by man of his purpose. Man is ever striving to gain his end. His conduct proceeds, his acts are performed in order to accomplish his desire. Desire is the motive power of all conduct. When motion is received, we experience the mental state, sensation. When motion is omitted, we have the mental state of volition. The intermediate stage in which the motion received is thus re-arranged, redistributed and reinforced, we call thinking. Memory is the final resulting mental state.

The home treatment of patients is only applicable among the well-to-do. If the family is able to bear the expense of treatment, any case of insanity may be cared for at home. The poor patient, on the other hand, suffering from an acute psychosis, should be placed without unnecessary delay in an institution especially devoted to the care and treatment of this group of cases.

The methods employed in the home treatment will be stated, and while necessarily only a brief superficial account is given, still it is hoped that it may prove of value in bringing to the attention of the Society what it is now possible to accomplish.

In acute insanity, the treatment resolves itself into rest in bed, overfeeding, wet pack, fresh air, and the occasional use of drugs as may be indicated. The patient should be put to bed at once. Remove all sharp instruments, weapons, drugs, cords, door keys, etc.; have the windows so arranged that they may not be opened over six inches either from the top or the bottom. The bed treatment impresses the patient with the fact that he is ill, and by further impressing the fact that the illness is curable, and by not occupying the patient's mind with games, odd jobs, etc.; in fact, by doing nothing to interest the patient, but by treating the disease as an ordinary illness, we obtain both physical and mental rest, and the result is a more frequent and speedy recovery. If motor excitement be present, it may require the temporary use of drugs, but it is much better for the patient to resort at once, if possible, to hydrotherapy. Hydrotherapy applies to the external as well as the internal use of water in the treatment of disease. This method may be conveniently carried out in private houses with modern plumbing.

The warm bath produces diaphoresis, influences the circulation, lowers the blood pressure, causes the elimination of morbid products, renders the surface of the body less sensitive and produces a sedative action. The cold bath should only be used in cases that respond to the severe shock produced by the application of cold water to a large surface of the body, and it should be followed by energetic rubbing. It increases the nervous energy, stimulates the functions of the body and raises the blood pressure. The spray, either warm or cold, should follow the bath in suitable cases for about five minutes. It is produced by a nozzle attached to a rubber tube which is connected with the faucet.

The wet pack is very useful in excited cases, as well as in insomnia. Wet a linen sheet in water and completely wrap the patient, only leaving head and face exposed. Over the sheet wrap one or more blankets. The wet pack may be used either cold or hot as the condition of the patient warrants, and may be continued from twenty minutes to several hours. The wet pack also proves a good temporary restraint for excited cases.

The use of hydrotherapy in no way interferes with the medical treatment. The hot air box may be easily improvised if needed. Insomnia is almost a constant feature of the acute forms of insanity. Drugs should be used only when indicated. Two drachms of paraldehyde, night and morning, quiets the excitement of young patients and produces sleep. Bromides are valuable, but their almost universal use in mental diseases is to be strongly condemned. Sulphonal, trional, and veronal are contra-indicated in acute depressed conditions. Sulphonal is almost a specific in acute mania, thirty grains for a man and twenty grains for a woman, every night. Massage and gentle faradism are useful aids to nutrition. The insane require stronger and larger doses of purgatives, or the enemata should be more copious than for constipation among the sane.

The treatment of paresis is systematic. At

the present day three methods are undergoing trial:

First, Urotropine, ten grains three times a day.

Second, The French school inject daily into the muscular tissues some form of mercury.

Third, Dr. Ford Robertson prepares and uses an anti-paralytic serum.

Overfeeding is necessary to restore the great waste of tissue going on in the system. The nurse should be instructed in acute cases to feed the patient every three hours, keeping a detailed record of the quantity of food taken. The food should be easily digested milk, eggs, meat juice, and such like. The need for a nurse trained in the care of the insane is of primary importance; in this city, one of these training schools annually turns out a corps of men and women well qualified to aid the physician in the arduous duty of caring for these patients.

As auto-intoxication is a frequent factor in the etiology of insanity, the alimentary canal should receive prompt and careful attention—the result at times of such attention being most gratifying.

There is much diversity of opinion in regard to the value of psychotherapy. The benefit is at times good in selected cases, especially after the acute stage of the insanity has passed. The personal factor of the physician enters largely into the results obtained. The cardinal point in the management of the insane is never to deceive them. Be absolutely truthful in every statement made.

Suicidal patients are to be watched night and day. While suicide is most common among melancholiacs, yet patients suffering from other forms of insanity often attempt suicide. An instructive case is as follows: A widow, aged forty-five, believed that one of the leading lawyers of this jurisdiction had plotted with others to deprive her of property after several years of litigation in which she decided that her lawyers and presiding judges were her enemies. She stated that she would take the law into her own hands, but, instead of attempting to harm her arch-enemy, the lawyer, she nearly accomplished the purpose of destroying herself by illuminating gas.

Refusal of food may be overcome by the watchful and persevering nurse. Spoon feeding may be resorted to but the pouring of fluid nourishment down the patient's throat with the feeding cup is not to be tolerated. Patients may often be fed after a hypodermic of hyoscin or duboisin. Nutritive enemata may be given. When ordinary means fail, resort must be had to the stomach or nasal tube. In violence and destructiveness, the use of the hot wet pack or hypodermics are indicated. In convalescence, if the patient is not taking the rest cure, occupation of some kind is necessary. Out of door work is best. Garden work keeps the attention on what is being done; the flow of ideas is checked, and the mind is prevented from dwelling on illusions, hallucinations or delusions. For indoor work, ordinary house work, knitting, sewing, carpentry, etc., may be resorted to.

In concluding this paper, I wish to emphasize strongly the fact that during acute insanity certain changes in the cortical cells, which lead to a chronic state, occur; and, therefore, the prognosis of insanity, like any other disease, is more favorable the earlier the disease is recognized and treatment begun.

1815 *M. Street, N. W.*

THE IMPORTANCE OF EARLY ATTENTION TO OBSTRUCTIVE RESPIRATION IN CHILDREN.*

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By request of your Secretary, Dr. Reese, I present for your consideration a few remarks on this subject, the importance of which cannot be over-estimated.

So much has been written about it that you would naturally conclude that all practitioners of medicine were sufficiently familiar with it to need no reminding of its importance.

I have, in the last twenty years, made several addresses before medical assemblies on practically the same subject under other headings. Still I find in practice that less attention is given to it by the general practitioners than its importance warrants. I constantly see children from eight to fifteen years of age, who show the deleterious effects of neglect in this regard at an earlier age, either on the part of the parents or the attending physician.

*Read before the Southside Virginia Medical Association, at Emporia, December 8, 1908.

The ill effects of obstructed nasal respiration and mouth breathing were known to Hippocrates, who refers to the resulting deformity of the palate and alveolus, the headache, the ear symptoms, the poor chest development, etc; and yet, centuries rolled by without any adequate treatment discovered until its etiology began to be elucidated a little more than thirty years ago.

Now that we know its cause to be due to adenoids, or hypertrophic lymphoid tissue in the naso-pharynx, enlarged tonsils, thickened turbinal structures, septal deviations, spurs and growths in the nasal chambers, etc., the remedy naturally suggests itself.

It is astonishing how large a percentage of children are mouth breathers. Many that you would not put in this class, because they breathe through the nose in the day-time, when they are in the erect posture, are confirmed mouth breathers at night when they lie down. The presence of slight adenoid tissue, or slight turbinal hypertrophy, may allow a somewhat imperfect nasal respiration during the day, but, when lying down, the blood flows into these parts, they swell up and effectually block the nasal passages. Such cases find the same result in making any great exertion, such as running, or going upstairs, or climbing any elevation, and the mouth becomes a substitute for the nose.

It is a common thing for adults to disclaim being mouth breathers, but will admit they open the mouth at the least exertion, and that the side they lie on at night becomes obstructed.

Children are not so observant, especially the younger ones, and this condition is only to be detected by close observation. The constant taking of cold in infants and young children, the presence of a so-called nasal catarrh, with secretion from the nose and in the pharynx, repeated sneezing, unexplained cough, earache, etc., are all symptoms of modified nasal obstruction even when they keep the mouth closed most of the time. When, however, the mouth is partially opened in sleep there is no other explanation for it than obstructive nasal respiration.

This obstruction interferes with the normal functions of the nose, which is to heat, filter, and moisten the inspired air. The mouth is not an efficient substitute, because the thermogenic power of the buccal cavity is very far below that of the nose, and it does not act as a filter at all, nor does it give the required amount of moisture needed by the inspired air for its physiological purposes. The nose secretes sixteen to twenty-four ounces of fluid in twenty-four hours, and the buccal cavity very little. Hence, in mouth breathing, as the air passes along the tract, not constructed to bring it up to its standard as a physiological food and blood purifier, it acts deleteriously by imperfect aeration of the circulation, and is an indirect irritant of the mucous lining of the pharynx, larynx, trachea and bronchi, because of the abstraction of their heat and moisture, and sometimes a direct irritant because of its impurities.

As the normal nasal secretion is not taken up by the air, it accumulates, becomes pathologically altered, and is retained to act as a local irritant, bringing about the so-called nasal catarrh. This, by direct extension, is another factor in producing pharyngitis, laryngitis, bronchitis or by way of the pharynx, which is part of the digestive apparatus, we may have gastric disturbances. In like manner by extension along the Eustachian tube, or by interference with its ventilation, earache, deafness, etc., result.

Most cases of acute suppurative aural catarrh with mastoid complications in children are due to the effects of nasal obstruction and especially to the presence of adenoids. The chronic changes in the ear, in the absence of acute symptoms, are partly responsible for the apparent inattention of such children, although the dull mental condition, due to some altered relation of the vascular and lymphatic connections between the brain and naso-pharynx plays a part in it.

Therefore, nasal catarrh, pharyngitis, laryngitis, bronchitis, cough, indigestion, malaise, nausea restlessness in sleep, nervousness in the waking hours, headache, deafness, earache and suppuration of the ears, impaired circulation, mental dullness, etc., are all directly traceable to impeded nasal breathing. Such children are more liable to croup and laryngismus stridulosa than children with free respiration, and possibly diphtheria as well. I have found facial chorea dependent upon this cause and cured by getting rid of the obstruction.

Obstructed nasal respiration is also a frequent cause of imperfect articulation and retarded development of speech. The nasal passages are the resonance chambers of the vocal apparatus,

and unless kept in normal condition, the voice is altered in character, and the articulation frequently impaired.

From the first to the eighth year the development of the face takes place, and more rapidly than in later years, and the shape assumed by the maxillæ at this period has an important bearing upon the resulting composite. Free nasal respiration is essential to their normal growth, and more or less deformity of these structures accompanies nasal obstruction, especially the high-arched palate, narrow alveolus and consequent irregular teeth. Deficient chest development is another sequel of nasal obstruction.

That this picture is not overdrawn is demonstrated by the experience of numerous observers, and you will find a large majority of them suffering from one or other of the many effects produced by defective nasal respiration, with occasional or continuous mouth breathing.

Many of these belong to what may be called the "lymphatic diathesis" with hypertrophy of the faucial, pharyngeal and lingual tonsils. Some others call this the "adenoid condition;" others, the "status lymphaticus." These glandular structures or lymph tissues may be only sufficiently enlarged to cause slightly impaired respiration, altered nasal secretions, occasional colds, congestive conditions of the naso-pharynx, hardly appreciable aural catarrh, with now and then an acute pharyngitis or tonsilitis; or they may be so well developed as to cause decided obstruction with the more serious consequences.

Enlarged cervical glands, both tuberculous and non-tuberculous, often accompany this condition, their infection being secondary and dependent upon the presence of the hypertrophied tonsillar tissue. It is claimed by many writers that the tonsillar crypts are a fertile soil for the lodgment of the tubercle bacilli, and an open portal for glandular and systemic infection.

Obstructions to free nasal respiration should be romoved by surgical measures, followed by proper medicinal and hygienic treatment, and by the practice of nasal respiration with closed mouth—the latter closed by artificial means, if necessary, so as to break up the contracted habit of mouth breathing.

This should be done when the obstruction is first noted at any age, and especially in the period from the first to the sixth year, whilst the development of the bones of the face is going on, and before complete ossification has taken place. In this way only can the resulting deformities of this pernicious condition be obviated.

The commonest cause of nasal obstruction is the presence of a mass of lymphoid tissue or an enlarged pharyngeal tonsil, known as adenoids in the post-nasal space, which blocks up the post-nasal openings and presses upon or obstructs the Eustachian tubes, causing acute or chronic change in the middle ear.

Associated with it we most frequently find hypertrophy of the faucial tonsils as well. These adenoids can be removed under general or local anesthesia. In children under seven years of age, general anesthesia is best, as subjects of that age cannot be satisfactorily handled under local anesthesia.

When looking for a safe anesthetic, we are confronted by a serious problem. Many of these causes are, as stated, subjects of the so-called "status lymphaticus" or adenoid condition, in which intermittent attacks of lymphotoxemia occur, which attacks render them peculiarly susceptible to shock, physical or psychical, and to danger of death from cardiac depression or paralysis. Hence, death has occurred under cocaine, ether and chloroform, and none of them are perfectly safe.

Local anesthesia with novocaine and adrenalin in children old enough to submit quietly to the operation has been satisfactory in my experience, and I have had no bad results.

In children requiring general anesthesia, ether is much safer than chloroform, as it does not depress the heart and deaths from its use are very few, compared to those from chloroform.

Rectal anesthesia should recommend itself in these cases, as it has proven very satisfactory in others, and the apparatus does not interfere with the operation.

When both adenoids and tonsils are to be removed, the adenoids should be taken out first, except when the latter are so large that they obstruct the way to the post-nasal space, and would interfere with the removal of the adenoids.

The strictest antiseptic precautions should be taken to avoid sepsis or infection, as both tuberculosis and syphilitic infection have been re-

ported from this operation. The instruments should be sterilized, and the mouth and post-nasal space of the case made as clean as possible by washing with an antiseptic solution and mopping with peroxide of hydrogen. It is well also to paint the parts with a one to one-thousand solution of adrenalin to lessen the amount of bleeding. The gag should be inserted to keep the mouth well open, and the uvula drawn forward with a palate retractor for the easier introduction of the instruments.

The operation should not be done except by one who has had experience in this line. I have known serious injury to the Eustachian tubes to be done by unskilled operators thus causing permanently defective hearing.

All the lymphoid tissue should be removed; otherwise the operation would have to be repeated. It is, however, with some difficulty that the fossa of Rosemuller is cleared of the vegetation. I find the best instrument for removing the masses at the vault and on the upper pharyngeal wall is Schultz's adenotome, which is made in three sizes. Properly handled, it can do no damage. Remnants of the vegetations can be gotten out by curettes of various sizes and different angles. The forceps is a dangerous instrument, except when used with great care under view with a retractor and good light, as damage may be done to the vomer and to the Eustachian tubes.

The examination of the post-nasal space with the finger is not always reliable, and, if possible, the palate retractor should be used, and the parts examined with the mirror and good light.

When the bleeding, which is rarely severe, is arrested, the tonsils should be removed. There are various methods for this, whether by cauterization (electro-cautery), by amputation (tonsillotomy), or by enucleation (tonsillectomy). Most of the later writers, however, agree that the common operation of tonsillotomy is only a makeshift, and does not give radical results, as the diseased crypts and follicle left behind give as much subsequent trouble, although not actually obstructive, as the enlarged tonsils did before. Combined, however, with the removal of the remnants by the use of the tonsil punch, it is almost as radical an operation as enucleation. Splitting the capsule and dissecting out the tonsil, or removing it in the capsule (in other words, enucleation of the tonsil, or tonsillectomy), are the most accepted methods in vogue. Carefully dissecting the tonsil from the pillars and from its bed, with knife, scissors or finger, it is lifted out with a pair of forceps, the tonsillotome slipped over the pedicle thus formed, and the tonsil ablated.

Annoying or dangerous hemorrhage is more apt to occur with tonsillotomy than with tonsillectomy, because the bleeding vessels retract into the remnant of tonsillar tissue and are difficult to locate and get hold of.

The hemorrhage may be due to capillary oozing, or to arterial bleeding. If caused by capillary oozing, pressure with plugs of cotton, soaked in peroxide of hydrogen, will usually arrest it; and if due to arterial bleeding, torsion with the hæmostat will stop it.

I have never had a dangerous hemorrhage from the tonsils, except once, but many cases are on record, and it might be necessary to ligate the external carotid to arrest the bleeding. In the case I had, in an adult, digital compression of the carotid for some time put a stop to the hemorrhage.

After the operation is completed, the patient is put to bed on the side or face, so that any hemorrhage will be noticed, until the effects of the anaesthetic wears off, when cracked ice, iced milk, or ice cream may be allowed. No hot liquids or food should be given, as they might promote bleeding, although dangerous hemorahage is rare, and only found in the so-called hemorrhagic diathesis. The next day the usual diet may be permitted. It is well to cleanse out the post-nasal space with the post-nasal syringe and some warm antiseptic fluid. Care should be taken that they do not catch cold, as I have seen earache follow this operation when this happened.

After some days, if we find the nasal breathing free during the day with the mouth closed, but mouth breathing at night still persists, we should close the mouth with adhesive strips so as to cultivate the habit of nasal respiration and break up the habit of mouth breathing. Moreover, deep respiration with the mouth closed should be practiced in the daytime as a help to the same end.

Another cause of imperfect nasal breathing in children is hypertrophy of the turbinal structures. I have often observed such enlargement of the anterior extremity of the inferior turbin-

ates as to almost close the lower nasal meatus. This will cause mouth breathing as effectually as the blocking of the post-nasal openings with a mass of adenoid tissue.

In young infants it is a practical bar to nursing, as when they attempt to suck their breathing is cut off.

An application of a solution of cocaine or novocaine, one-half of one per cent., with adrenalin, will clear the passage temporarily to allow of feeding such cases, but the radical cure of the condition is to be accomplished only by a partial amputation of the swollen structures, or by shrinking them with chromic acid. The amputation is done with the cutting duck bill forceps, just enough of the tissue being cut off to cause the turbinate to contract on itself. I have not often found the middle turbinates enlarged in children, although it is quite common in adults. When, however, they are the cause of the obstruction they should be amputated. This is, in my experience, most satisfactorily accomplished by the use of the cold wire snare. The catarrhal condition with more or less secretion in the nose and naso-pharynx that often accompanies these obstructions should receive subsequent attention.

Applications of argyrol, twenty per cent. solution, to the post-nasal space and spraying the nose with a weak solution of camphor and menthol in some oily menstrum like benzoinol, will be of service.

The important part, however, in the after treatment is the practice of nasal breathing, and once thoroughly established, the catarrhal symptoms will disappear.

200 *E. Franklin St.*

AN EXPERIENCE WITH AN UNUSUAL CASE OF PUERPERAL ECLAMPSIA.

By J. H. HIDEN, M. D., Pungoteague, Va.

A brief account of a recent case of puerperal eclampsia may be of interest to my professional brethren, the case being of peculiar interest to me strictly from a professional standpoint.

The patient was a child twelve years of age on her last birthday, October 8,1908. Her child was still-born at full term, January 31, 1909. Conception then must have occurred about May 1, 1908, when the mother was about eleven years and seven months of age—a very unusual thing for this climate.

My first visit to the patient was on January 29, 1909, and I found her in a most deplorable condition—greatly swollen with dropsy of face, hands, limbs, feet, etc. The labia majora were distended with edema to about the size of two large cocoanuts. The patient was of average development physically, but a mere baby intellectually. Repeated doses of cathartics and diuretics were given with no signs of improvement.

On January 31st, and thirty-six hours after my first visit, I was called upon, and found her in the third stage of labor. She had had a rapid labor, accompanied with seventeen convulsions, and was, upon my arrival, in a coma, which was soon disturbed by another convulsion. A hypodermic containing morphine one-sixth grain, and tincture of veratrum viride, drops eight, was given. In addition to this, calomel and jalap were placed upon the tongue. The pulse at this time was too high to be counted, and though within half an hour there was some diminution in its excitement, another convulsion necessitated another dose of the morphine mixture of half the former strength. And within anather half-hour this was followed with a third dose of veratrum of four drops, before the pulse could be reduced to seventy beats to the minute. The last dose was given by mouth. At this stage of the treatment another mixture, containing bromide of potash, chloral hydrate and veratrum, was prepared, to be given in moderate doses every two hours, or as occasion required, to keep the pulse within safe bounds and to quiet the nervous excitement. Small doses of Epsom salts and bitartrate of potassium were also given at stated intervals until free catharsis and diuresis were secured.

After the completion of delivery, the patient was soon put into a hot, wet pack and steamed for three hours; and after four hours' interval, the hot pack was again used. The patient continued in a coma for about thirty-six hours, but there was great diminution in the general edema, and it was evident that she was improving under the treatment. After consciousness was restored the case progressed to a rapid recovery.

Chemical examination of the urine while convalescing revealed an albuminuria, and the microscope revealed a very large percentage of epithelial cells and epithelial casts. The case

was evidently an acute parenchymatous nephritis. During convalescence, mild stimulating diuretics were used at stated intervals. This case was one of the eight consecutive cases of puerperal eclampsia in my practice, treated in a similar manner, with no mortality.

In discussing the treatment in question, I wish to say that the violence of this child's attack of eclampsia required as large doses of medicine as are usually sufficient in adult cases.

The use of morphine in moderate doses, given hypodermically with veratum, not only makes the latter drug safer, but materially aids in relaxing the vesical spasms, thus requiring less veratrum than would otherwise be the case. This is of no small import, for, though veratrum judiciously administered is unquestionably of great value, yet it is equally true that when given in heroic doses, it is a drug to be feared; and, with other aids at our command, I see no necessity for the massive doses which some physicians have advocated. It should also be remembered that morphine is contra-indicated in only rare cases of puerperal eclampsia, namely, those due to an interstitial nephritis. When the pulse has been reduced within safe bounds by the combination of morphine and veratrum, a mixture containing potassium bromide, chloral and veratrum, given in moderate doses at stated intervals, is better than to rely on one drug only, especially so when this is a powerful cardiac depressant.

When we find the convulsions are difficult to control with the conservative use of drugs, it is far better to employ the hot, wet pack as an aid than to press the use of drugs to the most heroic measures. The latter course, so often followed, is what threatens to bring the most valuable remedies into disrepute.

In managing a case of eclampsia, the physician should remember that the antispasmodic measures are only palliative at best, and the curative meaures must be found in the processes of elimination. The more thoroughly this idea is digested, the less need will we have for the continuation of massive doses of heart depressants, if such doses indeed are needed at all. "Treat the patient, and not the disease," is a growing, popular dictum which, as in puerperal eclampsia, is often not only misleading, but absolutely absurd.

GASTRIC ULCERS.*

By MATT OTEY BURKE, M. D., Richmond, Va.

Only during the last century have we been able to classify as a distinct disease round ulcer of the stomach. Cruveilhier was the first to give a clear, anatomical description of stomach ulcers and, for this reason it has been called Cruveilhier's disease. We have all, doubtless, had cases of gastric ulcer that we never recognized as such, probably because we were not looking for ulcer, or because the symptoms were masked by other conditions.

Statistics show that five per cent. of autopsies reveal gastric ulcer in some stage. There have been many theories advanced as to the cause of ulcer, most of which have been exploded, and, unfortunately, we are yet without a definite cause for the trouble. To say that we are dealing with a chemical, mechanical or thermic lesion does not always explain the facts in the case, for we have many cases that show no such previous lesion. On the other hand, many such lesions have been known to recover without producing ulcers.

To attribute the cause to over-production of hydrochloric acid is not satisfactory, for we have hundreds of cases of double the normal amount of hydrochloric acid which show no ulcers in the gastric walls. To say that vegetarians seldom, and that flesh eaters frequently, have ulcers does not give us a cause. Some think that chlorosis and gastric ulcer go hand in hand, but this too, has been proven false. Occupation has but little to do with the cause, for we find the same condition existing in the idle and the industrious, in the rich and in the poor. Altitude and climate have but little effect. Ulcers are more frequently found in women than in men. Age seems to play a considerable part. The years most prolific for gastric ulcer are twenty to forty, but younger and older subjects have been victims. Circumstantial evidence points most forcibly to the nervous system, the blood vessels and lymphatics, and the burden of proof seems to rest on the last two. Are these the real cause, or are they only agents of the offending object? I am inclined to the latter theory. Since we invariably have stomach trouble with appendicitis and gall-tract infection, is it not only possible, but also highly probable that some form

*Read before the Richmond Academy of Medicine and Surgery, April 13, 1909.

of infection may travel by way of the lymphatics or blood vessels to the stomach walls, and there produce the necrosis which we call gastric ulcer?

Muscular contraction must be an accomplice, for we find more ulcers in the pyloric end of the stomach, where the grinding process is greatest. The gastric juice is a factor only in destroying the tissue involved, and preventing the healing process. This is proven by the rest treatment and gastro-enterostomy, which operation changes the course of the food current, and this, in a measure, prevents the grinding process in the pylorus, and decreases very materially the amount of juices in contact with the ulcer. The operation gives mechanical and chemical rest to the ulcer.

The chief causative factors of gastric ulcer, so far as our present knowledge goes, are localized loss of nutrition, mechanical irritation and chemical destruction.

Pathology. The microscopic appearance of the serous membrane or external surface of a non-perforating ulcer is that of a lump or nodule in the wall of the stomach, usually almost invariably, in the course of a blood vessel. From the interior, it presents a funnel shape, "the edges clean cut, the base smooth, or it may show little islands sometimes covered with coagulated blood, or tough, dark mucus." The size of the ulcer varies from that of a pea to several centimeters. The most usual seat is at or near the pylorus, though it may be in any part of the stomach wall.

The microscopic appearance of a fresh ulcer: "The glandular tubules present a trough shape, as if cut off. In old ulcers a reactive inflammation sets in at the periphery, and leads to the formation of a calloused margin;" the fibrous framework is thickened, the glandular epithelium has undergone a change, and the lab cells have been replaced by cubical or cylindrical cells. The nuclei are not recognized by ordinary staining; their protoplasm has undergone a hyaline degeneration, "the sub-mucosa is permeated by a profuse, small-cell infiltration and a strong, vascular network. The layers of the muscularis are separated by fibrillary, intermediate tissue." The entire process is surrounded by a zone of irritation. There is always a tendency for the floor of the ulcer to adhere to the tissue beneath it. Cicatrization begins, and the the fibrous network is soon covered by the mucous membrane, though it may continue the contact beneath the membrane, thus causing a constant source of irritation, and distorted shape to the walls of the stomach, especially when adhesions to neighboring organs have taken place. Necrosis continues until cicatrization takes place, and so long as peptic gastric juice comes in contact with the ulcer. There is a tendency to thrombosis, caused by the corrosive effect of the gastric juice, but this thrombus is destroyed as soon as sufficient juice comes in contact with it, thus producing hemorrhage. If the necrosis extends to the serosa, an adhesion to neighboring organs is formed with peri-gastritis; or, if in the dependent part of the stomach, perforation into the cavity occurs, and is followed by general peritonitis, frequently by death. Sometimes there is perforation, which is stopped by adhesions to the omentum, and sometimes a circumscribed abscess forms.

Symptoms. The symptoms of a typical gastric ulcer are pain, tenderness, vomiting, hemorrhage, constipation and increased hydrochloric acid. As the development of the ulcer is gradual, so will the symptoms be insidious. In most, if not all cases of peptic ulcer we have a well developed pain or great discomfort after eating. The time of the appearance of the pain depends upon the seat of the ulcer, and severity depends very largely upon the quantity and the quality of the food. The pain is due to mechanical, chemical and thermic irritation. Coarse foods and foods not well masticated produce more pain than liquids. The food causes a secretion of hydrochloric acid, and larger particles take up less acid than finely divided particles; hence, we have more pain from this source. The ulcer produces more or less irritation to the nerves of the stomach, which causes an increased amount of acid to be secreted. The excess of hydrochloric acid and the irritation of the ulcer cause a firm contraction of the pylorus and prolonged retention of food; hence, fermentation of starches and fats, which distends the walls of the stomach, thus increasing the tension of the ulcer, with exaggerated pain, often reversed peristalsis and vomiting. The pain is also increased by swallowing food that is very hot or very cold. Usually, the pain ceases as soon as the stomach is empty, either from vomiting or food passing into the intestines.

If the ulcer is in the fundus of the stomach, the pain will come on immediately after eating; if near the pylorus, a little later; if in the duodenum, still later. Vomiting seldom occurs when the stomach is empty—generally after meals, and is usually caused by a spasm of the pylorus and reversed peristalsis. The spasm is produced by the irritating effect of the hydrochloric acid, and the food particles coming in contact with the raw surface of the ulcer. The vomited material consists of undigested particles of food (usually starches and fats, as the proteids have been digested by the abundant gastric juice), mucus and, sometimes, streaks of blood, occult blood and free hydrochloric acid. There is more or less tenderness in the epigastric region. Boaz lays considerable stress on the pressure points in the median line half way between the umbilicus and the ensiform cartilage and the dorsal points over the tenth and twelfth dorsal vertebræ. There is an excess of hydrochloric acid in most cases of ulcer, especially if there is much irritation caused by the ulcer. This is a nervous or irritation hyperchlorhydria. Constipation usually accompanies excessive hydrochloric acid.

Many cases of ulcer run their course without distinct hemorrhage. It is said that hemorrhage occurs in from about thirty to forty per cent. Hemorrhage may be independent of a paroxysm of pain or the ingestion of food. It frequently comes on without warning, sometimes several hours after taking food, during the night, or in the early morning hours, or when the patient is about his usual duties. On the other hand, hemorrhage may be produced by circumstances which accelerate cardiac action, or increase mechanical irritation: or coarse articles of food may cause hemorrhage. Frequently, there is considerable hemorrhage without vomiting, the blood passing into the intestines. The ulcer may be in the duodenum; in such case the stools have a tarry appearance.

The patient may present none of the classical symptoms, yet the suspicion of ulcer is so strong that we begin to take circumstantial evidence in the case, and by exclusion, linked with some positive proof, arrive at a conviction. A patient showing loss of weight and strength with no history of severe pain, no vomiting, no distinct hemorrhage from the stomach or bowels, slight discomfort after eating, at times loss of appetite; nervous and, in spite of rest and ordinary treatment, continues to grow pale and weak; finally, he presents a waxy pallor, with extreme emaciation. The heart, lungs, liver, kidneys and spleen show no lesion; the stomach contents may be normal or present a slight excess or deficient amount of hydrochloric acid, but no lactic acid or Oppler-Boaz bacilli. Hæmoglobin is deficient, erythrocytes greatly reduced, leukocytes not increased, and there is no evidence of diarrhea. We would naturally suspect a leaking ulcer in the pylorus or duodenum; in such case, the stools would show occult blood, and from this symptom complex we would diagnose ulcer.

Diagnosis. Given a case presenting the classical symptoms, pain, vomiting, hemorrhage, hyperchlorhydria, etc., we must decide whether they are caused by gastric ulcer or some other trouble. Is the pain due to ulcer or simple hyperchlorhydria, cardialgia, gall-stone or cancer? In gall-stones the hydrochloric acid is generally decreased; we usually have jaundice; the pressure points are further to right. Paroxysms do not depend upon food, but are often increased by overloading the stomach. Cancer is generally found in older subjects; pain does not always depend upon the intake of food, but is frequently relieved by it; hydrochloric acid is more often decreased; lactic acid and Oppler-Boaz bacilli are usually present. The duration of the trouble may aid very materially in making the diagnosis. Ulcer may continue for years; cancer does not often last more than eighteen or twenty-four months. When a cancer springs from an old ulcer, and in the early stage of cancer the diagnosis is difficult.

Is the hemorrhage due to ulcer or some other cause, such as tuberculosis, cancer, cirrhosis, varicose veins, traumatism, scurvy, or some acute infectious disease? The history of the case and the general symptoms will usually clear up the diagnosis.

Treatment. This may be considered under three heads—the rest cure, nitrate of silver and bismuth.

The rest cure. A patient who has hemorrhage should be kept absolutely quiet for several days—at least one week. The bedpan should be used for evacuations of the bowels and urine. For twenty-four hours, no food should be administered by the mouth, not even

ice water. For twenty-four or forty-eight hours no food should be administered at all unless the patient is very weak, and then only nutrient enemas should be given, such as solid peptonoids, alcohol and warm saline; or milk, yolk of egg, salt, flour. They should not be given oftener than every eight hours. Ice bags should be applied to the epigastrium. Drugs that often prove beneficial are ergot, adrenalin and chloride of calcium.

Second Week.—Rest in bed; hot poultices to the epigastrium; warm milk, beef tea; liquid peptonoids; albumen.

Third Week.—Morning and evening, while in the recumbent position, the patient should take a glass of alkaline mineral water; hot poultices should be applied to the stomach. The diet is the same as in the second week. If there is no tenderness or discomfort over the stomach, the patient may sit up in bed at the end of the third week.

Fourth Week.—The patient may be up in the room and about the house. The diet should be bland, such as mashed potatoes, purees of vegetables, tender, rare meats.

The nitrate-of-silver cure is highly recommended by Gerhardt, beginning with nitrate of silver, .25 to 100 c. c. of water, taking a tablespoonful in a wineglassful of water on an empty stomach three times a day. During the second week, the silver may be increased to .3, and the third and fourth weeks to .4. He also recommends washing the stomach with 1-1,000 nitrate of silver solution.

Bismuth is administered in very large doses on an empty stomach, two or three times a day, and it is said that these large doses do not produce constipation.

If the pain is very severe, it is necessary to administer morphia hypodermically; if it is only slight, it may be relieved with chloroform water and bismuth, or some of the milder anodynes.

Where perforation has occurred, a surgical operation is the only hope of saving the patient's life. When there is a slight but constant bleeding, which does not respond easily to rest and treatment, surgical intervention is indicated.

Gray's Glycerin Tonic Compound, by promoting nutrition, proves efficacious in many catarrhal conditions of the mucous membrane. Samples and literature on request.

THE URETER—ANATOMY AND PATHOLOGY.*

By BENJAMIN MERRILL RICKETS, Ph. B., M. D., LL. D., Cincinnati, Ohio.

Before presenting the subjects assigned, I must thank you for the very great honor you have bestowed upon me, and remind you that whatever incentive I may have had to become a gleanor in the field of Genito-Urinary diseases emanated from my teacher and your associate, Fessenden Otis, and his son, my classmate, W. K. Otis; one a pioneer, the other a most modern, aggressive worker in this interesting and most important science. The work of one represents many of its fundamental principles; that of the other many of its advanced teachings, such as will be everlasting. It would seem that there is but little more to accomplish in ureteral science other than more perfect means of diagnosis, for surely the operative technique has been developed to the highest degree.

Ureteral anatomy may be divided into three distinct classifications, in the order of their supposed frequency:

1st. Normal.
2d. Pathologic.
3d. Anomalous.

Each has distinct macroscopical and microscopical characteristics. The importance of each becomes more manifest in the tireless achievements of modern surgery.

The first, normal anatomy, is that which is more frequently based upon embryonic development in structure and relation. This class is probably less frequent than the second and third combined.

It is the first to which attention is first directed in the study of the subject, and it is ever uppermost in the mind of the student, and, therefore, better understood. Who would dare attempt ureteral surgery without having first exhausted its normal minute and topographical anatomy? It is taken for granted that all who are especially interested in this subject are thoroughly conversant with its normality.

Its early history begins with Salbertus, 1585, who described the normal anatomical structures, while Dilthey, 1723, wrote a dissertation on the values of the ureters. C. Bell, 1812, before the Medico-Chirurgical Society, London, described the muscles of the ureters, and their ef-

*Read before the Genito-Urinary Section of the New York Academy of Medicine, December 17, 1908, fifty lantern slides being used for illustration.

fects in irritation of the bladder. He speaks as follows: "I am about to describe a set of muscles which seem not to have been observed by former anatomists. They are attached to the orifices of the ureters and are seated in the bladder. In health they are instruments of a very peculiar organic action, and, in disease, the cause of most distressing complaints."

Morgagni speaks of them as compact fleshy bodies which take direction towards the orifice of the bladder and, after proceeding a little way, unite to proceed forward and terminate in the caput gallinaceum.

Lietaud describes them as "La trigone de la Vessie." To-day the anatomy of the ureter is as well founded as that of any other animal tissue.

The form of normal ureter is divided into dilatations, constrictions, isthmuses, reservoirs, spindles, ampullæ, and spirals, each of which may vary in number and dimension.

Ureteral isthmuses are three in number and constant:

1. Proximal.
2. Middle.
3. Distal.

"*The proximal ureteral isthmus* is the constriction located adjacent to the distal renal pole (sometimes called the neck of the ureter)."

"*The middle ureteral isthmus* is at the point where the ureter crosses the iliac vessels."

"*The distal ureteral isthmus* is located in the wall of the bladder at the distal end of the ureter." (Robinson.)

"Ureteral dilatations are three:

1. Proximal (calyces and pelvis.)
2. Middle (lumbar spindle).
3. Distal (pelvis spindle).

They are reservoirs and are due to the obstruction offered to the flow of urine through the ureteral isthmuses or constrictions." (Robinson.)

Spirality is a common property of the ureter. It arises from the Wolffian body. The normal number of spirals is one and one-half. Five spirals have been observed in one ureter.

The third, anomalous anatomy, deviates from the normal structure and relation due to defective embryonic development, such as:

1. Malformations. 2. Malpositions.

Either or both of these may extend to a fatal degree at any time during fetal, infant, childhood, or adult life, or they may be of no consequence in advanced life.

Each kidney may have one or more ureters entering the bladder, or there may be but one ureter connecting both kidneys with the bladder. There may be one or both kidneys without any ureter whatever. Numerous ureters may be given off from one or more kidneys, each to open independently into the bladder, or they may unite to form but one opening into the bladder; or one or more openings from one or more ureters may enter the alimentary tract (at any point), the vagina, uterus, paritoneal cavity, or abdominal wall, or there may be an entire absence of ureteral exit.

Point of entrance in the bladder may be anywhere above the internal sphincter of the urethra behind or in front of the peritoneum. They may vary closely or distantly approximate each other in their entrance to the bladder which may be direct or indirect, extremely small or large, with or without function, to prevent the backward flow of urine, blood, pus or serum.

Dimensions of the ureter may be equally varied. The length may be greater or less than normal and their course to the bladder and relations to the surrounding structures absolutely at variance with the normal type. They may have a direct or circuitous course to the bladder behind or in front of the peritoneum. They may be straight, spiral, curved or angular, and the circumference may be also greater or less than normal, and very considerable at different points.

The blood and nerve supply may vary from normal to any degree, the entire absence of one or both having been observed, in which instance a ureter otherwise normal in structure and relation may become useless from malnutrition alone.

The consideration of anomalies has become most important, and they are becoming better understood as ureteral appliances and their technical use becomes more general.

Historical.—Much has been written concerning anomalous ureters, one of the earliest contributions having been that of Tyson, 1685, who reported having found four ureters in an infant. Hartman, 1690, characterized congenital irregularities of the ureters as "monstrosities." It is interesting to note with what accuracy some of these conditions are described

by the earlier observers, and the great similarity of the succeeding reports.

This has probably been due more to the effects of Byron Robinson than any other man. To him we are indebted for these most excellent and varied illustrations, which are pen reproductions by his own hand.

The second pathologic anatomy—abnormal conditions other than causes due to irregular fœtal development.

Prolapse, occlusion, calculus, cysts, rupture, fistulæ tuberculosis, inflammation, ulcer, benign and malignant neoplasms, and such other conditions as may not be herein mentioned are of this class. Either or more of these may develop before or after birth.

Prolapse may be congenital or acquired partial or complete, (protruding the external urethral orifice), in either sex, at any age. Bloomer, reported thirteen such cases, ten of which were congenital.

Occlusion represents obstruction due to any cause, at any point, in any degree, periodic or permanent, due to injury or pressure from without or within the ureter, or blows or surgical operations. Bands, ulcers, cicatrices are one and all prominent factors in its causation.

Calculi formed primarily in the ureter are rare, but when they do occur are composed of phosphatic salts deposited above a stricture or upon an ulcer or foreign body within the ureter.

Cysts are infrequently found in the ureter, and, when present, may be single or multiple and contain blood, serum, pus or urine, one or all. They may be primary or secondary; primary when they originate as a result of defective structure of the ureter not due to outside causes, such as diseases of the kidney, bladder or other abdominal viscera. Secondary when due to these causes or to obstruction. Eve, 1889, reported before the Pathological Society, London, a case of psorosperial cyst of both ureters in a female, age 51.

Rupture is an incident whether due to trauma or disease and there does not seem to be any point of predilection. concretions are the most frequent cause, especially when associated with infection or stricture.They are circular or linear in character, seldom involving the entire circumference of the ureter.

Fistulae, like rupture, are incidents due to accident or surgical trauma or disease, or they may be congenital, due to biological development irregularities. They may be single or multiple, and, like the ureter, terminate within the alimentary, biliary or urinary tract, peritoneal cavity, Fallopian tube, uterus, vagina, or upon the external surface of the body. The most frequent cause is surgical operation for the removal of uterine neoplasms per vaginam.

Tuberculosis is common as a secondary deposit resulting from tuberculosis of the kidney, which is its most frequent source. Primary tuberculosis is indeed rare.

Bang, 1874, and Gemmell, 1886, each report a case of primary tuberculosis, but no special point in the ureter has been assigned for attacks by the primary form. The secondary form however, is near the bladder when that organ is involved, or near the kidney when it is diseased. No special time of life has been given as most favorable for attack .

Benign neoplasms, such as fibromas, polyp, angioma, lymphoma, papilloma and adenoma are not common but of sufficient occurrence to be given due consideration. Lebert describes a polypoid fibroma and Thornton a papillary fibroma.

Ureteritis, according to Mann, 1894, may be distinguished by several forms or stages. First, catarrhal, in which there is little swelling of the tubes with desquamation of the epithelial lining.

Fournier says that the ureters are chiefly involved in pyelitis—usually both are involved, but often only one side, usually the left more seriously so.

Malignant neoplasms include both sarcoma and carcinoma, either of which may be primary or secondary; carcinoma is the more frequent and is usually secondary.

Targett, 1891, discovered a case of sarcoma of the ureter with pelvis of kidney embedded in the growth. Hektoen, 1896, reported a case of primary carcinoma of the ureter. Chian records one of choles teatoma, Ribberta myosarcoma of the ureter, and Drew, 1897, a villous carcinoma.

SCARLET FEVER.*

By JOHN A. OWEN, M. D., Turbeville, Va.

The subject of special interest to us this evening is an acute infectious fever, characterized by pharyngitis, an extensive cutaneous eruption

*Read before the South Piedmont Medical Association, held at South Boston, Va., April 20, 1909.

and tendency to excite nephritis. This broad and striking definition of scarlet fever emphasizes the peculiar points of one of the most dreaded of all contagious diseases.

Of the early history of this disease little is known. This seems rather strange, for with its rash and other characteristic symptoms we would suppose that such careful observers as the Arabian writers would have described it. However, it was not until the latter part of the seventeenth century that certain German writers, Sydenham among them, clearly recognized and described its peculiarities.

These early outbreaks were confined to the continent, but, like most infections following the lines of commerce, it soon crossed the Atlantic, and in 1735 we find it safely implanted in our own soil, where, conditions appearing favorable, it has remained—at times quiescent only to break out afresh at some unexpected point. Observations showed from the outset a variable character in epidemics which hardly occurs in any other affection. Sydenham in 1664 did not attribute greater importance to this disease than we now do to rubella; yet, fifteen years later, in the life of this same great observer, London was visited by an epidemic in severity second only to bubonic plague, and it was one hundred years later that Bretonneau, a young physician of equal importance, declared that a scarlet fever patient only died when incorrectly treated. A few years later, when in the presence of an epidemic in which frightful mortality took place, he was compelled to acknowledge how greatly he was mistaken.

Even in our own times, observers have noted the rise and fall of the grade of malignancy in which the mobility and mortality run parallel, and have recognized two varieties, *simple* and *malignant.*

Etiology. The clinical features owe their origin to a poison that proliferates solely within the human being, whereas outside of the human organism it is capable of maintaining its virulence, but is scarcely ever able to proliferate.

For several years streptococci have been held to be the causative agent, since cultures from the throat and nasal discharges nearly always show their presence where complications develop, but probably they are only particeps criminis and not the chief malefactor. Others hold that the specific micro-organism, though morphologically similar to the streptococcus, possesses a specific characteristic—the property of producing a particular disease. This view is supported by the observations that the streptococcus was not found in any cases terminating fatally before the fifth day, but is usually associated with those cases that run a mild course. Recently Mallory demonstrated the presence of very remarkable segmenting bodies in the tissues of scarlet fever patients which he claims are the cause of the disease. From this mass of diversified opinion we can state nothing with the precision of finality—and are yet to hear the last word on this subject. It seems that certain races possess notable immunity, especially the Japanese, though cases have appeared among them at various times. In negroes this disease is rarely noted, but its presence might be easily overlooked in them unless the more severe symptoms were present.

Though pre-eminently a disease of childhood, adults are not exempt, and congenital cases have been known. It is most common between the ages of two and ten, and most fatal up to fifth year. The sexes seem equally susceptible. Immunity is usually though not always conferred by one attack; physicians and nurses who have had the disease in childhood often develop angina while in attendance upon a case of scarlatina.

Perhaps in none of the infections is there so wide a diversity of opinion as to the *incubation period.* In a few well authenticated cases the disease has developed within twenty-four hours, while in others from ten to fourteen days have been required. McCullorn, of Boston, after a personal experience with several thousand cases of all kinds, puts the incubation period at sixteen days. In Holt's experience of over one hundred cases, 87 per cent. developed in from two to six days, and 66 per cent. in from two to four days; rarely any required over one week. Short incubation indicated severe type. Generally speaking, if, after exposure, a week passes without symptoms, the chances of infection are slight.

The chief mode of infection is the patient himself and the most frequent carriers are those mild cases in adults in which the angina is the only evidence of the infection. That a healthy person and a healthy third person may

carry the disease, though a rare occurrence, is by no means an impossibility.

An epidemic in Norway was started by a servant girl who had nursed a case of scarletina in a neighboring city, returning to her home on account of an attack of angina tonsillaris, which did not confine her to the house; yet she spread the disease to her own and neighboring families —the disease attacking in all sixty-four persons.

Discharging ears are potent factors in infections, as hospital records show.

All excretions are infectious, as well as furniture, carpets, books, pictures, pets; and even flowers sent out of the sick room to give others pleasure have been known to carry the disease.

Pathology.—The characteristic lesions of this disease occur chiefly in the mucous membrane of the pharynx and in the skin. The pharynx shows hyperemia of the mucous membrane with hyperblastic infiltration of the entire adenoid tissue—not only of this region, but the body in general; even Peyer's patches and the mesenteric glands share in the general process. Small lymph nodes are found in the liver, spleen and kidneys; these latter organs appear markedly hyperemic and show small hemorrhages, particularly near the surface, with parenchymatous degeneration of the glomeruli, giving rise to acute interstitial nephritis with albumin and casts in the urine.

This condition is not usual before the third week of the disease and is designated post-scarlatinal. Endocarditis is by no means uncommon.

The infection may spread from the pharynx to the nose and middle ear, giving rise to congestion in the ear, to thickening of the tympanic membrane or to mastoiditis, if mastoid cells are invaded. The nose, throat, tonsils and ears are foci from which subsequent infection may be carried many weeks after the danger is seemingly past.

The eruption of scarlatina belongs to the macular variety, causing acute hyperemia and exudation of cells and serum in the corium about the blood vessels and hair follicles, resulting in death of the epidermis wth desquamation.

Symptoms.—Probably in none of the other acute exanthemata are prodromes so conspicuously lacking or the onset so sudden and severe as here.

In an ordinary case, a child who a short time before was playing and seemingly in perfect health comes in sick and voluntarily assumes the recumbent posture. There may be a chill or convulsion with vomiting, sudden rise of temperature, thirst and delirium.

One of the most prominent early symptoms is sore throat, and so constant is it that it has almost become axiomatic, "No angina, no scarlatina."

The tongue is red at its margins, with white coat on the dorsum; swollen papillæ, rendered prominent by desquamation, give the classical strawberry tongue.

The mucous membrane of the pharynx is congested, with sharp lines of demarcation toward the hard palate; tonsils are swollen, with reddish or yellowish flakes or striæ on their surface.

The face often is bloated, with sometimes a saddle-like redness across the nose which coalesces with fever redness of cheeks, but leaves the region of the mouth and chin marked by conspicuous pallor.

In the course of the first day and a half, the cutaneous eruption appears first upon the chest and side of neck and back and in the gluteal region and gradually, in the course of two or three days, spreads to the extremities.

By the fourth or fifth day the eruption has spread over the entire body and the little patient looks as if enveloped in a scarlet mantel which closely covers the whole body, save the mouth and chin, which invariably remain free; their pallor gives a very striking contrast to the general redness upon the dorsum of the hands and feet; the skin occasionally appears swollen and blistered, resembling erysipelas.

French observers have noted in the fully developed exanthem this peculiar condition. If the finger nail is passed over the red surface, in the entire course over which it has passed a white streak of varying intensity is left, which is probably due to vaso-motor spasm, which gradually disappears—the so-called raie blanche.

In all cases, no matter how severe, the eruption is developed from separate punctiform areas which may be shown by pressure upon the skin, which still leaves small dark areas as the blood is driven out; the redness returns first

to original spots when pressure is decreased.

The eruption reaches its height usually by the eighth day, and then begins to fade; the temperature, which is coincident with the eruption, is usually highest during the first thirty-six hours, gradually falls to normal by the third or fourth day. A prolonged continuation of fever points to complications.

The pulse is at first rapid—130 or more—with high tension; it usually varies with the temperature.

The urine is scant and high colored, or it may be entirely suppressed. Albuminuria is not common before the third week, and may persist several weeks after the attack is over.

The daily output is a very important factor in ultimate results. Desquamation or exfoliation of the dead epithelium is even more characteristic than the eruption, and, like it, begins on the neck and chest as fine flakes; the epithelium of the fingers may be shed as glove-like casts; that on the soles of the feet as broad bands, which make the diagnosis from this phase alone. These, then, are the symptoms of a case of moderate severity. In severe cases all these symptoms are exaggerated, and death is due to toxemia or to complications, or there may be a tedious recovery with permanent lesions.

Diagnosis.—A typical case is not likely to be mistaken; the malignant and mild cases are the ones that give trouble. In those cases which die before the rash appears, the disease may be suspected from presence of epidemic angina, high temperature and convulsions.

In very mild cases the eruption may be of short duration—less than one day—and easily overlooked; hence make careful examination of throat and hard palate, axillæ and groins for characteristic punctate eruption; later on, the desquamation is necessary. The membrane of scarlatina may be distinguished from that of diphtheria in that it is not so uniform, is more striated and follicular, and by the absence of the KL bacillus.

Certain drugs, especially belladonna, antipyrin and quinine, give eruptions very similar to those of this disease, but in such cases there is a history of having taken the drug, and the injection of deeper layers with dark points on pressure, so characteristic of scarlet fever, are lacking.

Since there is no bacteriological test known, many cases must remain in doubt, but if we keep before us always the symptom-complex of possible exposure, incubation of less than one week, sudden onset, angina, strawberry tongue, swollen cervical lymphatics and tonsils with yellowish striæ, punctate eruption in axillæ and groins, the fine dark points which do not disappear on pressure, albuminuria and the character of the desuqamation, we will hardly make a mistake.

Prognosis.—The general mortality varies with the character, epidemic and the age of the patient; the general mortality is in children from one to five years of age, and the average deaths are from 20 to 30 per cent. Death is due to toxemia, early complications, as bronchopneumonia, pleurisy or endocarditis or to late nephritis. Every case is a law unto itself, and a prognosis, even in mildest cases, should be most guarded; the daily temperature curve and urinary output are the signals to be watched.

Treatment.—Owing to the similarity of the streptococcus and the supposed micro-organism of scarlet fever, the use of anti-streptococcic serum has become very popular, but it possesses no specific value. Treatment resolves itself, then, into combating toxemia, preventing the spread of the contagion, and prevention of complications.

The child should be kept in a well lighted and ventilated room—if possible, one apart from general living apartments—should be clothed in a flannel gown and kept strictly in bed for three weeks at least, or until all symptoms have subsided and temperature has become normal.

Especial care should be taken to prevent chilling of the body and exciting the nephritis. The diet should be liquid for the three weeks, consisting chiefly of milk, which is given in the proportion of eight ounces every two hours to an adult; water is given between each feeding; thus some liquid is taken every hour.

To avoid monotony, koumyss, junket, malted milk, and cream mixtures may be used; later on vegetable soups, rice, gruel, milk toast, barley, jelly and other cereals are allowed until a general diet of tea, cocoa, coffee, red meats and vegetables is gradually reached.

The urine should be examined daily, and a specific gravity as high as 1012 is considered

an indication for increasing the quantity of water.

The vomiting of the early stages is best controlled by giving chloral, two grains, in a teaspoonful of peppermint water on crushed ice, every two hours until relieved.

For fevers and delirum, an ice-cap for the head and sponging of the body with tepid water and using gentle friction are recommended. The itching and burning so often complained of may be relieved by adding carbolic acid to the bath, or giving regular bran baths followed by boric acid dusting powder. For insomnia, trional or veronal may be used.

Should endocarditis develop, an ice bag to the precordium with one to five drops of the fluid extract of digitalis and one one-hundredth grain of strychnine and one-half ounce of whiskey may be given. The throat should be douched with a fountain syringe filled with normal salt or weak soda solution, and, if covered with tough membrane, it may have the following applied through a glass tube: Chlorel, 15 grains, glycerine, one ounce. The stream should come with some force against pharynx or part of throat from which the membrane is to be dislodged. The child is prepared as for intubation with hands by side, wrapped in a blanket, pinned at the neck, knees and ankles.

The care of the skin is one of the most important points in treatment; and here I wish to sound a note of warning against the too prolonged use of emolients, which fill up the pores of the skin, prevent it from performing its normal function, and add to the strain on the kidneys.

Oiling of the skin should be limited to the early days of the disease, thereby hastening, and not retarding, desquamation. For this purpose, use eucalyptol, 1 dram, to an ounce of white vaseline or carbolized oil of cocoa butter, as you may elect.

Special efforts at hastening desquamation by detaching the skin from the general body surface do not shorten the quarantine, since the soles of the feet are the last to become loosened. This process may be hastened by soaking soles once or twice daily in hot soda solution for ten minutes; then in hot soap suds for equal periods; then rubbing briskly with a rough towel.

A general warm soap and water bath, followed by a one to 5000 bi-chloride of mercury bath, should be required before the patient is discharged.

In conclusion, I would say that in a few diseases is it so true as here that eternal vigilance must be the watchword; the physician should be constantly in attendance and each symptom receive most careful scrutiny. Let him be a watchman ever and a therapeutist only when necessity arises—knowing when to give drugs, what to give, and, equally important, when not to give.

A CHANGE OF BASE.

By WILLIAM WAUGH, M. D., Chicago, Ill.

To the older physician the basis of the art of medicine was essentially clinical. The problems which occupied his thoughts were sick people and how to cure them. He studied disease in its clinical manifestations, and in the course of years acquired a certain skill in the recognition and management of clinical conditions. This was variously interpreted by the laity, generally by the phrase that "the doctor understood the patient's constitution."

Whatever may have been the meaning attached to this phrase, it indicated the underlying conviction in the patient's mind that his physician understood him and his diseases, and that his life and health were secure in that doctors' hands, more secure in the hands of the man who had treated him for years and understood his personal peculiarities than they would be in the hands of any stranger.

Much of the knowledge of the physician died with him. To a certain extent he was able to transmit a part of it to the student who, studying in his office, was admitted to participation in this work to a certain degree, giving him the opportunity of seeing the patient with the doctor's eye, and of learning how he met the various emergencies presented by his practice.

As knowledge advanced in all lines, the doctor ceased to be satisfied with this knowledge. Much evidence as to the results of disease was revealed by dissection and by autopsies, and this he sought to assimilate with his previous knowledge, and to gain thereby a better insight into disease in itself to better direct his means of curing. As his studies of pathology progressed, however, the effect was to lead him into difficulties by disassociating in his mind the clinical picture from that presented by the pathologic

one. Where formerly he had endeavored to associate in his mind a case of chronic Bright's disease, for instance, with the remedies best calculated to cure it, he now sought to transfer this conception to that of "a large, white kidney." Where he had previously acquired a well-founded confidence in his remedies for the cure of the patient presenting himself with a certain group of symptoms, he now began to ask himself what were his resources in the way of restoring to normal condition a degeneration, an atrophy, a hypertrophy, and the other material lesions which he found upon the post-mortem table? As he looked upon these ashes of a burned out fire, he asked himself with some disdain, what possible effect drugs could have in rebuilding the lost tissues and re-creating new life?

A natural result of these studies was to be seen in a profound reaction against the confidence he had previously felt in his drugs. This reaction went, in many instances, to the extent of an absolute repugnance against his old friends. It was quite to be expected that pessimism as to the value of drugs should arise from this change in the physician's conception of disease. It was equally natural that he should turn to mechanical measures of removing mechanical lesions, and that surgery should take on the magnificent development it has displayed during the last quarter of a century. This was a result necessarily following the physician's study of the mechanical results of diseases, and his inability to fit to them other mechanical remedies.

This, however, constituted but one phase of professional progress, and, while inevitable, it was not a final phase, but must, with equal necessity, be followed by the next. In this we see another reaction, when the physician realizes the mistake he made in basing his conception of disease upon dead anatomy, instead of upon living pathologic physiology. It is not so much the results of pathologic processes with which the physician is concerned, but the disorders of physiologic function displayed while the person is still alive.

We are only beginning to enter upon this phase of the situation. As it develops we may expect to see physicians again inquiring concerning those aberrations of physiologic equilibrium displayed during the life of the individual, and of our means of influencing the living, active functions so as to restore the lost equilibrium. The sacrifice of a diseased organ by its surgical removal is no longer satisfactory, and the era of conservative surgery, of a surgery that seeks to save and to cure the patient, is dawning.

That department of our work has taken on a development which is permanent. We have learned that we can do many, many things formerly thought impossible. We have learned that there is scarcely a part of the body which cannot be invaded by the surgeon's knife, without the sacrifice of the patient's life. The peritoneum, the brain, and even the heart have thus been added to the surgeon's sphere. The technique of surgery has been perfected to an amazing degree; in fact, it seems that the limit of development in this direction has been reached, and the surgeon must direct his attention to the study of physiologic functions, and of the influences by which physiologic functions may be directed, for lack of other unsubdued fields.

We look, therefore, to note from now on that the current of medical thought will be diverted to the study of the vital functions and their derangements, and of the various influences by which these vital functions may be restored to healthy action. Among these the study of drugs should not be neglected, as offering in the vast majority of instances the best, the quickest, the most available and the least objectionable of influences for accomplishing these objects.

The way has been opened for such studies by the possession of perfected weapons for this work. As long as we had only feeble, uncertain and ever-varying drugs, modern medical science justly turned with contempt from the the materia medica. This is no longer the case. We have a limited line of drugs, concerning which we have all the knowledge necessary for their clinical application. We know that these drugs are varying, that identical effects are to be expected from similar doses, given under similar conditions, and from that one sure point we are enabled to work with a certainty never before experienced by the medical practitioner.

With this advantage we look to see a development of drug- therapeutics within the next quarter of a century which will acrry us far and away beyond the farthest point of the horizon now visible.

Ravenswood Station.

Correspondence.

License Tax on Doctors an Emergency Measure During Confederacy—The Albert Baldwin Sanatorium.

Editor Virginia Medical Semi-Monthly:

I note that you continue to argue for the repeal of the license tax on physicians in Virginia, and you are right to do so.

This tax would seem to be a relic of the war between the States. In 1863 the Confederate Congress considered an "Act to lay taxes for the common defense and carry on the government of the Confederate States." Under this act physicians, surgeons and dentists were to be taxed fifty dollars for three years unless the act should be sooner repealed. Surgeons in the Confederate service were exempt. Lawyers were also taxed fifty dollars.

As this act was apparently not approved until February 17, 1864, and the war ended in April, 1865, this tax of fifty dollars a year was a more temporary expedient than was anticipated.

Fifty dollars in Confederate money was a small tax, as one would pay that amount for a hat at that time. So the Confederate Government in its great need was more lenient than the present State of Virginia, and it did not design to tax its doctors for an indefinite time.

The above data are taken from a work whose title is unpleasant and rather untruthful to the Southern people of the sixties: "The War of the Rebellion," Series IV, Vol. III, page 140.

In your issue of May 7, 1909, from El Paso, Texas, I wrote that the records of the Albert Baldwin Sanatorium, situated in El Paso, shows a most gratifying series of results which have given it a national reputation. This was written a short time after I arrived at that institution, and was written from misinformation.

It is an institution primarily for the treatment of incipient tuberculosis. After spending three months in it, I cannot recommend it.

May 24, 1909. THOS. R. EVANS, M. D.

Book Notices.

Clinical Diagrams.

These "diagrams," published by J. B. Lippincott Co., Philadelphia, in sets of twenty-five sheets, price fifty cents, are designed for the "graphic representation of clinical phenomena, for preservation with notes of cases." They are drawings of the nude body, marking the front, the back and each side of the male body, and the front and back views of woman. Explanatory memoranda are printed with each set, suggesting the locations of murmurs, dullness, flatness, rales, cavities, etc., which may be attached to the notes of a case by mucilage or an ordinary clip. The diagrams are the design of Dr. James C. Wilson, Physician to the Hospital of the Jefferson Medical College, of Philadelphia, and will be found very useful to anyone who proposes to file notes of his cases for future reference or study.

Epoch-Making Contributions to Medicine, Surgery and the Allied Sciences. Collected by C. N. B. CAMAC, A. B., M. D. With portraits. Philadelphia and London. W. B. Saunders Co.. 1909. 8vo. 655 pages. Cloth, $3 net.

This volume will long be of interest to the medical historian. The epoch-makers, whose contributions make up this work, are not given chronologically, but in the table of contents. The epoch makers, as spoken of in this book, are Lister, with reference to Antiseptics; Harvey, as to the Circulation of the Blood; Auenbrugger, on Percussion of the Chest; Laennec, on Auscultation and the Stethoscope; Jeuner, concerning Vaccination; Morton, Warren, Wells and Simpson, as to the introduction of Anesthetics; and Oliver Wendell Holmes, as to the Contagiousness of Puerperal Fever. With reference to Anesthetics, we are surprised that no mention is made of the late Dr. Crawford W. Long, of Georgia, who undoubtedly was the first to use ether as a general anesthetic for surgical purposes. Nothing is said of Sayre as to spondylitis, nor of a number of other discoverers, whose writings have revolutionized the world, such as Sims, Battey, etc.

Primary Studies for Nurses. By CHARLOTTE A. AIKENS, formerly Superintendent of Columbia Hospital, Pittsburg, etc. Illustrated. Philadelphia and London. W. B. Saunders Co. 1909. 12mo. 435 pages. Cloth, $1.75 net.

This is designed as a text-book for first year pupil nurses, and contains courses of study in Anatomy, Physiology, Hygiene, Bacteriology, Therapeutics and Materia Medica, Dietetics

and Invalid Cookery. For the scope named in the title it is an excellent instructor. We presume matters with reference to the nurse in the sick room, in operative attendance, etc., are reserved for later volumes. In the Appendix are given a number of useful memoranda, such as household antidotes, five hundred questions for self-examination as to the contents of the book and for review purposes, etc. It is a book that, in many particulars, will be helpful in families where trained nurses are not employed—especially as to dietary for the sick, etc.

Conservative Gynecology and Electro-Therapeutics. By G. BETTON MASSEY, M. D., Attending Surgeon to American Oncologic Hospital, Philadelphia, etc. Sixth revised edition. Illustrated with 12 original, full-page, chromo-lithographic plates, and 15 full-page, half-tone plates of photographs, taken from nature, and numerous engravings in text. Philadelphia. F. A. Davis Co. 1909. 8vo. 462 pages. Cloth, $4 net.

The sith edxition of this practical treatise on the diseases of women and their treatment by electrctity" contains much new material, as also toning down of opinion formerly expressed as to the value of electrical treatment of gonorrheal salpingitis. The author retracts remarks in former editions, condemnatory of operative intervention in the presence of doubt as to malignancy of growths. A new chapter is added on the principles of electro-surgery for the removal of new growths, treatment of tubercular adenitis by mercury-zinc ions, and the use of high frequency, high potential currents in gynecology. The treatment of cancer by mercury-zinc ions has been brought up to date. Full descriptions are given of various electrical appliances and details as to their mode of use, etc. This book places electricity, in the treatment of diseases of women, in its proper, conservative useful light.

Editorial.

The Virginia State Board of Health.

Every now and then bobs up some suggestion as to the conduct of certain officials of this Board over a year ago, when they were advocating its re-organization by the Virginia Legislature. It is due these officials to say that they did not then oppose the removal of State license taxes from Virginia doctors, but, as they feared both measures could not prevail during the same Legislative session, they preferred the bill looking to the re-organization of the said Board.

Now, that they have succeeded in securing the re-organization of that Board, we have the personal assurances of the chief of them that they will bend their energies during the next Legislature to have the Bill for the Repeal of State License Taxes on Doctors adopted, and we must add that we have confidence in their promises to us. We have the voluntary assurance of the chief health officer that, recognizing the justice of the cause, he and others of the Board will give their personal influences and help to its success during the approaching General Assembly.

That the present State Board of Health, with its much enlarged monetary appropriations from the State, has been of great benefit to the profession and the people of this Commonwealth cannot be denied. Its plans for abating nuisances, the investigations of the causes of special diseases in different parts of Virginia, its readiness to render help whenever called upon in the way of bacteriological investigations, and in supplying antitoxin sera, etc., when called upon so to do—these things have shown its earnest desire and efforts to limit the ravages of preventable diseases.

While we then thought and still believe that both measures could have been secured during the Legislative session of 1907-8, had there been a steady pull altogether for both, we must yet accord to others the right of a difference of opinion.

Since the last General Assembly, we have heard of a number of changes of opinion in that prospective body, favorable to the Repeal Bill, and a number of the new prospective legislators are also favorable. In fact, we have heard of certain legislators who allowed themselves to be "paired" when the matter came to an issue in the House of Delegates, who are now advocates of the measure. During the interval since the last Legislature, good, sound educational work has been going on. So that, if the profession generally will continue steadfastly at this educational work during the six months before the next General Assembly, there can be but little reasonable doubt of the success of the Repeal Bill.

Most singularly and inexplicably, there are

one or two communities of doctors in the entire State who are not taking active interest in the measure. They assert it is "undignified" in the profession to be insisting on the measure during successive legislative sessions. If the claim is just and right, it should never be let alone until success crowns the effort. It is a true, good adage in such matters: "Strike while the iron is hot," and now it appears to be so.

Our concern in such matters cannot be ascribed to personal interests, for the Editor of this journal is reaching that age when the adoption of the Repeal Bill can scarcely be of any value to him. But as he looks back over the over forty years spent in the activities of his profession, he is amazed that doctors of Virginia have so long allowed themselves to be imposed upon by the State in keeping up a State license tax on the legitimate practice of medicine, surgery, etc. And the time is fully ripe when the younger and oncoming generation of qualified practitioners should be relieved of the oppressions we have borne.

Under the leadership of the present Committees on Legislation of the Medical Society of Virginia as well as the Homeopathic State Medical Society, prospects are most encouraging. Local and District Medical Societies of the State should appoint strong, influential committees to properly instruct their legislators in ample time before they come to the General Assembly.

To carry out the plans of the Legislative Committee of the Medical Society of Virginia, money is needed for printing, missionary work in various parts of the State, etc. While the doctors of certain cities, towns and counties have contributed sufficiently liberally, others have been negligent—as if willing enough to enjoy the benefits of the Repeal Bill without contributing to help the cause. This should not be so. Even those who have no care one way or the other as to the success of the measure will probably have its benefits thrust upon them. For the common good, each doctor should be willing to contribute of his means to help the cause.

With the combined influences and earnest work of members of the Medical Society of Virginia and of the Homeopathic State Medical Association, of the State and local Boards of Health, of the local and district medical societies all over Virginia, and with the individual influences of a number of doctors throughout the Commonwealth not connected with any of the above, it should be an easy matter to so educate prospective legislators as to the rightful claims of the profession in favor of the Repeal Bill as to secure its adoption.

We especially wish to assure all concerned of the interest felt in the matter by officials of the Virginia State Board of Health, and of their promises to help secure the success of the Bill.

Graduates of Medical Institutions.

At this season of the year our mails are crowded with newspapers, announcements of graduating exercises of various medical colleges of the country. As we examine them, there is a natural anxiety as to what is to become of them. Some, it is true, are well to do, so far as their financial conditions are concerned. But most of them are poor, and have struggled through at least four years of college courses without any material income for that period of years. A number of them have borrowed the means with which to pay expenses during these four years or more, which they are yet to refund. They have adopted all sorts of economy "to make buckle and tongue meet."

These graduates have yet to pass the ordeal of the State Board of Medical Examiners in which States they propose to locate. How many of them will fail of success in passing satisfactory examinations, no one can foretell. But those who are dependent and yet fail will have to seek some other occupation at least for the summer months to secure enough to enable them to live and to study over their course until the fall or winter sessions of the Examining Boards. One can but feel more than a touch of sympathy for those who are now hopeful, but doomed to disappointment. We trust the number of disappointments will be exceptionally few.

We were shocked a few days ago in reading a newspaper account of two theological students expelled from a Theological College for cheating at an examination. The Faculty is to be commended for such a course. Every year or so we hear of applicants for examination before Medical Examining Boards being

likewise expelled for like offense. When it comes to the point that theological and medical graduates are cheating, they should be summarily dealt with. For in these two professions especially—the ministry and the medical professions—should honesty of purpose and action be characteristic. The dishonest doctor becomes the reprobate, the charlatan, the quack, and the imposter.

What is to become of the vast majority who may successfully pass examinations before the various State Boards. Some will start out with encouraging prospects, and a few of them will no doubt achieve eminence, if they begin their professional careers with a proper appreciation that their studies in medicine have really just begun. "Everlastingly sticking at it brings success" is as true a saying for the young doctor as for other callings in life. He has, first of all, to equip himself for practice in the way of providing himself with instruments, appliances, journals, books, etc. He should promptly connect himself with his local and State Medical Societies and attend their meetings as regularly as possible. He should study each case in practice as it comes to him as the Clinical Professor of his Alma Mater did with the clinical material brought to him. Let him prepare himself, as far as practicable, for emergency cases, for the proper handling of such cases does much in establishing his reputation in the community. Avoid pomposity, for such is the usual trait of the charlatan. Remain faithfully in the office during business hours, and in the waiting for patients, lay out a time of study and preparation for work. Preparedness is a great essential to success. Take advantage of opportunities to see cases of interest in the practice of others, and to render assistance when called upon to do so. Let the young doctor show himself to be a willing worker.

With advances of the times, fields are broadening for the occupation of doctors. Large corporations are more and more finding it to their interest to have their medical or surgical officials—competent to attend the sick or wounded. Cities and counties are gradually coming to recognize the need of health officers. Sanataria and hospitals are becoming more and more in demand, to meet local necessities. Even some of the wealthier are calling for medical attendants in their travels for health.

There are many country communities where doctors are wanted. It is unfortunate that so many doctors just starting out seek locations in already over-crowded cities or towns. Many such doctors soon find themselves moving from place to place; they become "rolling stones which gather no moss," and sooner or later find themselves compelled to seek other fields than medicine for a livelihood. It is often remarkable to visit communities where numbers are called "doctor" so and so, who graduated well, passed their State Board of Medical Examiners, etc., who have established themselves in some other line of business than medicine —although they are listed in the various Medical Directories as doctors. Of the two thousand listed as doctors in Virginia, there are fully one hundred and fifty such who have entirely dropped out of the ranks of practitioners; and such a proportion applies for almost each of the other States of the Union.

Unless the young graduate has some specially inviting opportunity—especially if his means are limited—we would not advise him to locate in the cities, but establish himself in some of the many counties needing doctors. As soon as he becomes a citizen thereof, let him take interest in matters of real public interest—such as the building of good roads, in public health matters, etc. Thus, while making his reputation as a good citizen, he is also building up for himself a better reputation as a doctor if he also shows preparedness for his professional work. And let him learn from the beginning to charge properly for his medical services. Those that cannot pay materially in cash can pay in marketable products of the farm, etc. We hear of a number of instances where competencies have been thus accumulated.

At selected times, plan to take post-graduate clinical courses at one or another of the now numerous Post-Graduate Colleges of the country. Attention to such things better prepares one to meet the duties of the practitioner—especially if he be a country doctor, without general hospital advantages in his own community.

Who Was Dr. George H. Simmons?

In discussions of the interests of the profession in the American Medical Association, or of the standard of any of its officials, it is unfortunate that parties should have descended to

the level of the vulgarian in defending their hero. No one can countenance the characterization of the practice of urology, or even of specialties relating to diseases of the anus, rectum, etc., as beneath the dignity or recognition of surgeons and physicians. So that when the *Kentucky Medical Journal*—the official organ of the Kentucky State Medical Association—undertakes to defend "that peerless national leader, George H. Simmons," against criticisms, by stigmatizing the author of said criticisms as "a specialist in the filthiest of human diseases"—as if such a fact vitiated the truthfulness of the said critic's assertions—the *Journal* seems to have been unaware that its hero was "one of the same kind."

Such a remark by the Kentucky *Journal* led Dr. Lydston, of Chicago, to an examination of the records of the said "peerless national leader, George H. Simmons," which does not show him up in enviable or brilliant colors; nor does it reflect credit upon the Rush Medical College as to its requirements for graduation in medicine 1891-'02—the college year when Dr. Simmons was a registered medical student there.

Before that time, Dr. Simmons was a homeopath, and a reputed graduate of the Hahneman Medical College. While a practitioner at Lincoln, Nebraska, he either authorized or allowed his name to be advertised in the daily newspapers to the laity as taking special charge of patients seeking relief from "diseases of the skin, *genito-urinary organs,* and gynecology."

The *Texas Medical Journal,* May, 1909, also contains reproductions of two advertisements clipped from the *Nebraska State Press*—a secular newspaper. One is of "G. H. Simmons, M. D., *Specialist in all Urinary and Rectal Diseases.* Cure *guaranteed* in all cases of Hemorrhoids, Piles, Fistula, Ulcers, Fissure, Itching Piles and all forms of Rectal Diseases—no matter how long standing." If a doctor in one of our Eastern States had been guilty of such an advertisement in a secular paper, he would have been classed with the quacks and charlatans, and not recognized in regular professional circles. The other advertisement is "G. H. Simmons, M. D., Specialist. Devotes special attention to the Diseases of Women," etc.

And yet, this is the man who is the "peerless national leader," who has been Secretary of the American Medical Association since its re-organization, who was for sometime Chairman of the Council on Chemistry and Pharmacy of the Association, which Council so abusively condemned even the use of some of the simplest of proprietary preparations! Is such an enviable record for the "peerless national leader" of American medical ethics? "Be sure your sins will find you out."

A Useful Association.

The Virginia Conference of Charities and Correction did splendid work at its recent meeting held in Lynchburg, and further demonstrated that it is a useful and progressive organization which deserves the cordial support of all public spirited and philanthropic people.

Among the subjects discussed were many that were of special interest to physicians, as well as to the public generally. In papers presented by Drs. William F. Drewry, A. S. Priddy and J. S. DeJarnette, a strong plea was made for the insane and the epileptics of the State. The public and the profession were urged to take a deeper interest in our State hospitals and the care and treatment of their inmates. Special stress was laid on the early recognition and treatment of insanity before it becomes incurable. It was shown that the hospitals needed more funds and larger forces to give that treatment and care approved by the most progressive communities. It was shown though that there were no insane confined in any of the jails or almshouses of the State, but that the hospitals were overcrowded.

Steps were inaugurated looking to the formation of local associations, having as their object the care and supervision of patients after they have been discharged from the hospitals, in order to prevent recurrence of mental diseases.

The colonization of epileptics came in for a liberal share of discussion, and the concensus of views was that the colony recently established near Lynchburg should be developed so as to care for both the sane and insane epileptics of the State.

Various phases of the public health, particularly in reference to the prevention and treatment of tuberculosis, were presented by such experts as Dr. Ennion G. Williams, State Commissioner of Health; Dr. C. P. Wertenbaker, of the United States Public Marine Hospital

Service, and Dr. R. K. Flannigan, Health Officer of Charlottesville. A committee was appointed for the purpose of organizing a State anti-tuberculosis league, with branches in cities, towns and counties throughout the State, to make an organized fight against the "white plague." Under the auspices of the Conference a most creditable anti-tuberculosis exhibit was made, demonstrating what was being done and what is proposed to be done by the State Health Board, the State hospitals, the penitentiary, and various local organizations. The exhibit thus collected will form an important part of a traveling exhibit that will be shown in various sections of Virginia for educational purposes. The supervision and administration of hospitals, jails and almshouses was a subject ably discussed by Dr. George H. Denny, President of the State Board of Charities; Hon. J. Alston Cabell, Rev. S. C. Hatcher, and Rev. J. T. Maston, members of the State Board, and Major E. F. Morgan, Superintendent of the penitentiary. These gentlemen pointed the way to improve the present conditions wherever they do not measure up to the highest standard of efficiency.

The education and training of defective children in the public schools and the care and management of the delinquent child, and the advantages of the juvenile court, were ably discussed by Mr. Charles B. Cooke, Mr. J. T. Mastin, of Richmond, and Mrs. D. W. Read, of Charlotte. Further steps were taken looking to the establishment of an institution for the training of delinquent girls. Dr. Drewry is President of the Board of Directors of this proposed institution.

Other instructive and valuable papers were read and discussed, but the foregoing is sufficiently demonstrative of the excellent character of work and the high order of men and women who are the leading spirits in this organization. The next annual meeting will be held at Charlottesville, in the spring of 1910. Rev. J. T. Mastin, Secretary State Board of Charities, was elected President; Mr. W. Reginald Walker, of Richmond, Secretary, and Mr. E. F. Sheffey, of Lynchburg, Treasurer, and Mr. Walter E. Addison, Lynchburg, Chairman of the Executive Committee.

The Alaska-Yukon-Pacific Exposition

Opened at Seattle, Washington, June 1st in a greater state of preparedness, from all accounts, than any exposition of recent years. There will be many attractions unique except to that section of the country, and those who have the time and means will find a trip to the great Pacific Northwest one of education as well as pleasure. The closing day will be October 15th.

Dr. E. M. Reninger, Director of the Medical Department of the Exposition, has at his command a modern, well-equipped Emergency Hospital. He has set aside a room for the convenience of visiting physicians, where they may write letters or while away spare moments reading medical journals. It is also announced that any visiting physician may have his mail sent in care of the Emergency Hospital at the A.-Y.-P. Exposition.

The Medical Examining Board of Virginia

Will hold its first semi-annual session of 1909 in the city of Richmond, June 22-25, for the examination of applicants for license to practice medicine or any of its branches in the State of Virginia. Dr. Rawley W. Martin, of Lynchburg, President; Dr. R. S. Martin, Stuart, Va., Secretary. Examinations are to be held at the University College of Medicine, and will begin promptly at 9 A. M., Wednesday, June 23d.

Correction.

In the last issue of this journal, May 21st, in an article on "The Value of the Von Pirquet Test for Tuberculosis," by Dr. John Staige Davis, of the University of Virginia, Dr. Davis is given the title of Professor of Pathology and Hygiene, whereas it should have read: Professor of Theory and Practice of Medicine, and Pediatrics, University of Virginia.

Transactions of Medical Society of Virginia

For the session held at Richmond, Virginia, October 20-23, 1908, are about ready for mailing. It will be remembered that a fire last February destroyed the building and all its contents in which the *Transactions* were approaching completion. It required several weeks for the printers (Messrs. Gill Bros.) to establish a new plant, and they deserve credit for the "rush work" which enables them to issue the volume so speedily.

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Original Communications.

THE DIAGNOSIS AND TREATMENT OF THE EARLY STAGES OF HIP DISEASE.*

By A. R. SHANDS, M. D., Washington, D. C.

Professor of Orthopedic Surgery, George Washington University; also University of Vermont, Burlington, etc.

While it is the intention of the writer to give special attention to the diagnosis and treatment of the early stage of hip disease in this paper, a brief resume of the pathology and etiology will be given to refresh your memories and thereby aid you in better appreciating the real purposes of the paper.

At one time a number of pathological processes were included in the title of hip disease, but now it is limited to tubercular disease of the structures of the hip joint.

It is generally recognized that hip disease follows, especially in children, a distinct type, which is classed as a degenerative tubercular osteitis. It presents itself in whatever joint it appears in much the same form, affecting the spongy bone of the epiphyses, most often near the epiphyseal line. Here the newly formed bone is least resistant on account of the very sluggish circulation at this point. It may begin as a single or multiple foci of tubercular degeneration. These foci easily coalesce and an area of infected granulation replaces the normal structures; very soon pus will develop and then begins a rarefying osteitis, if the original focus is not absorbed or walled off by the process of the formative osteitis. Unfortunately, the most common course is for the rarefying osteitis to extend into the joint. As soon as the synovial cavity is invaded by the pus organisms, they develop under these conditions very rapidly; synovial fluid acts as a fine culture medium, producing large quantities of pus, which, in turn, destroys rapidly the soft structures of the joint bursting the capsule and, burrowing in the direction of least resistance, soon finds an outlet into the outside world.

It is not very uncommon for the rarefying osteitis to find its way out of the bone without affecting the joint, and when such does happen the course of the disease is much shorter. This takes place when the tubercular foci of infection burrow through the epiphyseal cartilage towards the trochanter; in other words, on the distal side of the capsule. Several years ago I had a patient who had a typical case of hip disease that had existed for a year or more when a large abscess developed just below the trochanter. The abscess was incised and well drained with gauze packing. The wound was entirely closed within six weeks, and this ended the disease which had existed for over a year; at any rate several years have passed and there have been no symptoms of any relapse.

When a spontaneous cure takes place it is either by absorption or calcification of the tuberculous tissue, or by degeneration and evacuation through an external opening. An anchylosed joint is usually the result of one of nature's cures, which is the result of two granular bony surfaces being in contact; the union at first is a fibrous one, which, later on, ossifies as a result of deposits of lime salts. Sometimes in the formation of this bony union, a cheesy mass is included, and to this cause may be attributed many of the relapses of hip disease; this fact should be always had in mind and held as a contra-indication for anything but the gentlest manipulation and the greatest care in correcting the deformities in the late stages of the disease.

The importance of this was very forcibly impressed upon me many years ago by an unfortunate result following operative procedures for the correction of a flexed and adducted hip.

*Read at a meeting of the Southside Virginia Medical Association, held at Petersburg, June 8, 1909.

The patient had had a severe case of hip disease with active symptoms extending over several years, but finally made an excellent recovery, with the exception that there was marked flexion and adduction, without ever having developed an abscess. A Gant's femoral osteotomy was attempted to overcome the distortion. Without describing the technique of that operation in detail, I would state that the manual force that was used to complete the fracture of the femur failed in its purpose, for instead of completing the fracture it caused to be broken up the bony union of the femoral head to the acetabulum, which, however, allowed the deformity to be very easily corrected. The usual plaster-of-Paris spica was applied. Within a week or so the child began to have daily rise of temperature which soon indicated its septic nature. Very soon it was discovered an abscess was developing about the hip; this was the beginning of a long, tedious, suppurative hip disease. Fortunately, the child's ultimate recovery was very good. I am fully satisfied that this unfortunate result following the operation was caused by breaking up an encysted cheesy mass of tubercular material within the joint. Konig has called attention to the danger of *"Operative tubercular infection;"* he thinks there is danger of increasing the absorption of tubercular material by opening lymphatic and blood channels in the operation.

It is a well recognized fact that many of the late relapses of hip disease are due to the fact that tubercular material in the process of recovery becomes encysted within newly formed tissue, and may remain quiescent, or may cause relapses, if disturbed, many years after apparent cure. I have had a case of this kind this spring at my clinic at the University of Vermont. A child twelve years old was brought in with a history of having been pronounced cured by me at this same clinic three years ago, presenting a typical picture of acute hip joint disease. This child had been under treatment at one of the Boston hospitals for about four years before I pronounced her cured. She had been without any special treatment for over three years, having had no acute symptoms during that time. About six months ago she had a severe fall and sustained a sprain of the old diseased joint; since that time she has had marked symptoms of hip disease, including the formation of an abscess which is discharging pus at this time. I believe the relapse in this case is due to the same condition and cause as the one referred to above following the attempt to do a Gant's femoral osteotomy.

Little need be said in a paper of this kind of the etiology of hip disease for it is now recognized by all to be due to tuberculosis. The inherited tubercular tendency to hip disease is strongly advocated by many, and is undoubtedly a strong factor in its development. There is a vast difference of opinion as to traumatism as an etiological factor in hip disease. Gibney observed 845 cases of spinal paralysis in children, a class of children that would be naturally subject to many falls and injuries, and found only four complicated with joint disease. Roser has reported 100 cases of fractured elbows in children with no tubercular disease to follow. Shaffer, of New York, says: "Experience proves that traumatism excites only acute disease as a rule."

Hip disease is pre-eminently a disease of childhood. Something like ninety per cent. of the cases occur before the fourteenth year. The fact that it occurs mostly in children is accounted for by the fact that at this period of life the cancellous bony structures are in their greatest activity, blood supply the largest and its tissue changes the most rapid. While in children the disease begins most often as an osteitis, in adults it begins often as a synovitis. In a few cases the disease begins in the acetabulum; in others, the acetabulum becomes involved during the process of the disease and is often perforated.

Traumatism as a causative factor in hip disease should only be regarded as an exciting cause. Local conditions that favor the development of tubercular bacilli may be induced by injury by causing a hemorrhage in the substance of the cancellous bone, and thus produce a suitable soil for their growth. On the other hand, it is more than probable that the disease itself is responsible for the injury in that the limb is weak and causes the child to fall, thus producing the condition referred to in the preceding paragraph.

The subject of the diagnosis of hip disease has been so much written about and made so plain by so many writers, it would seem that the last word had been said, and that nothing

more could be added to simplify the matter; yet so many mistakes are still being made in not recognizing it in its early stages, I have been induced to add some facts that have come to me in my experience in dealing with the disease, hoping that some one who may hear this paper may be helped in recognizing in its early stages the next case that he may come across; or, at least, arouse his suspicion of the probable condition present, and cause to be called into consultation some one who has had extensive experience in handling these cases, and if by that means I save some child from being a hopeless cripple I shall feel fully repaid for the effort in preparing this paper.

The symptoms of hip disease are not numerous, but are very significant and should demand the closest attention of the clinician. The two symptoms that I attach greatest importance to are *pain* and *limp*. The lameness in the early stage is quite characteristic, and the most characteristic feature of it is that it is intermittent. The history of the case regarding lameness is very important. It is true in nearly every case that the lameness in the early stage is so slight that it is scarcely noticeable except in the early hours of the day. In the morning upon arising the child will appear to be stiff and will limp slightly, but after he is up and around for a few hours this lameness passes off. This may occur every day for a week or more and then pass off, or even a month or more, but as time passes on these periods of lameness will increase until it becomes constant. The guarded movements of a child that is lame is often quite noticeable; the child will walk with a slight flexion of the knee and hip, bearing the weight of the body on the ball of the foot, allowing the heel to come down gradually. This saves the inflamed hip joint the jar that would follow the normal gait.

The next symptom of the early stage that I attach greatest importance to is *pain*. This is never located in the hip in the early stage, but always on the inner side of the knee, along the distribution of the obturator nerve, whose filiaments are irritated by the local process. This pain at the knee is very misleading, and often practitioners of extensive experience are misled by it. I have under my care at this time a patient that was treated for knee joint trouble because of the fact that the child had constant pain at the knee. This child had been treated for several months with local applications and anti-rheumatic remedies. When she came under my care the knee was immobilized in a plaster-of-Paris cast. Upon examination I found a well developed case of hip disease, with the limb so firmly flexed that it required an anaesthetic to correct the deformity.

Pain at night causing *night cries* is seen in the early stage. The night cry is almost always worse in the early hours of the night, before the child is profoundly asleep. The explanation of this is that the limb is held rigid by the involuntary muscle spasm, and as the child drops off to sleep the muscles relax, causing the inflamed surfaces to press together, causing pain that wakes the child with a cry. Later in the night the child is so profoundly asleep that the muscle relaxation ceases to awake it. This symptom is very important and should at once arouse suspicion of some joint condition.

The most important symptom to be observed is muscle spasm; this is responsible for the pain and lameness above described. It is a reflex muscle spasm, and can be detected in a slight degree at the initial stage of the disease by one experienced in examining such cases. When thoroughly well developed it will limit the motion of the joint in all directions. Free passive motion will be permitted within a limited arc, but just as soon as the limit is reached the pelvis will move. The degree of muscle spasm will correspond with the sensitiveness of the joint and will vary in degree from time to time, but will eventually become constant. Sometimes it is so prominent that it will convey the impression that the joint is anchylosed. The use of a slight anaesthetic will enable you to decide whether such is the case. The history of the insidious and slow development of muscle spasm is most important, for it will be present in any joint that has suffered traumatism, but in such cases the onset will be sudden and will soon begin to subside with appropriate treatment. Not so in hip disease; here it will continue to increase until the extent of the disease has reached its maximum, and will be the last symptom of the disease to disappear. Persistent muscle spasm is always accompanied by a changed attitude of limb. Flexion of the thigh upon the pelvis is the distortion first to be noticed; very soon the limb will become ad-

ducted. Flexion distortion is often concealed by tilting of the pelvis. This can easily be detected by placing the child on its back on a table and pressing the popliteal space down to the level of the table, when this is done the lumbar spine will at once be arched upwards, producing a certain degree of lordosis.

Adduction of the limb will produce apparent shortening. There are other symptoms, such as change in contour of the hip, atrophy of the limb, actual shortening of the limb, and even others, but these symptoms are only seen in well developed cases. The diagnosis should be made long before such are present; hence, as it is only the intention of the writer to call attention to the early symptoms, these will not be described.

In summing up the symptoms of hip disease, in considering differential diagnosis it is most important to take into consideration the history of the case. It is a chronic disease and very slow in its onset. It is a disease, as a rule, of one joint, very different from rheumatism. Any persistent disability of one joint should arouse suspicion of a tubercular lesion. It does not improve rapidly, differing greatly in this respect from an injury that may simulate many of the symptoms of hip disease. In making your examination the child should always be entirely stripped of all clothing and be placed on its back on a covered table. The examination should always be done by putting the well limb through all the normal arcs of motion. I have found this a most excellent plan, for it serves the double purpose of familiarizing yourself with all of the normal arcs of motion, and will help you in readily detecting any limitation of motion in the diseased joint, and at the same time serve to gain the confidence of the patient. If you frighten the patient, it will resist you to such an extent that your efforts to detect limitation of motion will be defeated.

Local signs of hip disease are not very prominent until the disease is well advanced; occasionally firm pressure with the fingers over the trochanter will reveal a sensitiveness. Swelling is not present in the early stage. The diagnosis of hip disease should be made by any one who is careful in making a systematic examination along the lines I have indicated; failure to make a diagnosis is more often due to lack of a proper examination than to any particular obscurity of the case.

A hysterical hip joint probably causes more trouble than any other joint affection one has to deal with, but even here one should not experience any great amount of trouble if he will take a good history of the case, remembering that hysteria is more common in young adults of a decided neurotic temperament. These patients over-do the matter of simulating the symptoms of hip disease, they are out of all proportion to the physical conditions present. I have had some of these hysterical joints that have been very puzzling for a time, but close watching has very soon satisfied me of the real conditions. There are many other conditions that might be mentioned in considering the differential diagnosis, but they are not very essential to the purpose of this paper; hence will not be mentioned. I have endeavored to give some practical points in the diagnosis of these cases that have always served me well.

At the present time all surgeons, possibly with the exception of a few radical general surgeons, agree that the conservative method of treating hip disease is the correct one. Not a great many years ago there were quite a number who practiced radical operations, such as excision of the head of the femur for the total extirpation of the diseased foci. My only object in mentioning this is to condemn it as being bad surgery. Radical operations in the early stage of hip disease should have no place in the treatment of this malady. The treatment should be conservative, first, last, and all the time. The great objection to the removal of the head of the femur is that in so doing the epiphyseal cartilage is removed, which checks the growth of the femur to such an extent that often an almost useless leg results. To illustrate this more forcibly, I will refer to a case that I reported in an article published seven years ago. This boy, at the age of five years, had an excision of the hip by a surgeon in New York of national reputation. The operation was done in the early stage of the disease. It was very evident that all trace of the disease was removed, for there was good evidence from the cicatrix present that the wound healed by primary union. I measured this boy when he was ten years old, at which time he had six inches of shortening and a perfectly flail limb. At that rate I should say that by the time he is grown the limb will be at least twelve inches short.

My remarks upon the treatment will be restricted to the early stage of the disease as indicated in the title of this paper. If the treatment is properly carried out along the lines I am going to give, very few of the cases will go to the stage of serious complications.

I have given a fair trial to treating these cases both with the ambulatory brace, and the so-called plaster-of-Paris method, and have become thoroughly convinced that the plaster-of-Paris spica, in my hands at least, is by far the best means of meeting all of the indications in the management of these cases. I have not used a steel brace, except the Thomas posterior splint in convalescent cases, in the past ten years. I have adopted the plaster-of-Paris spica entirely, and the longer I use it the more I am pleased with it. In the use of the plaster-of-Paris spica one is entirely independent of the instrument maker, which is very desirable.

The joints should be protected from all jar, exaggerated pressure, or violent motion; therefore, the indications in treatment are to furnish *fixation, extension and protection;* to benefit the patient's health in every possible way, to prevent and correct deformity, and to meet such complications as may arise.

The treatment should be so adapted that it can be continued not only through the acute stage, but through the entire convalescence, until the joint is able to stand without injury from the jars incident to locomotion. Muscular spasm is undoubtedly nature's effort to produce immobilization of the joint to relieve the pain; therefore, one should do for nature what she is trying to do for herself, and thereby relieve her of the strain incident to her efforts.

By far the best mechanical means of immobilizing a joint is a plaster-of-Paris spica; this method fulfills all three of the indications above mentioned—fixation, extension, and protection ——when properly applied. If distortion is present it should be corrected before the plaster-of-Paris is applied. If the contraction is not very great, the deformity can be corrected by gentle traction as the dressing is applied, without an anesthetic; if this cannot be done an anesthetic should be used. If the contraction is of long standing, the tendons at fault should be cut subcutaneously before applying the dressing. The joint should be thus protected until all tendency to muscular spasm has subsided, which occurs very rapidly under the perfect rest thus afforded. No rule can be laid down as to length of time the plaster should be kept on. This will depend upon the severity of the disease and the perfection of the immobilization. Generally speaking, it will be necessary to keep the plaster on from six months to a year, and sometimes longer.

The application of a plaster-of-Paris spica is easily done and should be effectually applied by any one with experience in handling plaster-of-Paris bandages. It is highly important to produce good extension while the plaster is being applied, and if it is applied from the toes to the nipples, which should be done in all acute cases, the extension gained at the time will be retained, if the plaster is snugly applied around all of the bony prominences. After the acute symptoms have subsided, a short spica may be used which need only be extended from the knee to the umbilicus. With this a child can walk very well and is comfortable, and at the same time the hip is well protected. Since I have adopted this method to the exclusion of the so-called ambulatory brace, I have had but few abscesses to develop.

If the distortion of the hip cannot be entirely overcome by gentle extension at the first application, put the limb up as described in a partially corrected position, and after a few weeks' rest the chances are that at the second application the deformity can be corrected. The test of a few weeks will often cause the muscle spasm to subside sufficiently to allow the limb to be brought down in normal position, but if such is not the case, then give an anesthetic. This will enable you to bring it down if firm adhesions have not taken place in the joint. If the joint is apparently anchylosed, rather than to use any great force, I prefer to allow the disease to be cured with the limb in a distorted position and later do a Gant's femoral osteotomy to correct the deformity.

In the general management of these cases, one should have always in mind that it is a tubercular infection, and should be treated just as that condition should be managed when of the pulmonary type.

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THE EXTENT AND IMPORTANCE OF THE VENEREAL DISEASES IN THE SOCIAL BODY.*

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The venereal diseases are world diseases, and have undoubtedly been a plague to humanity from the earliest times. But more has been found out about them in the past thirty years than in all the thousands of years preceding. And what has been found out about them has enormously emphasized their importance as social evils. These diseases are secret diseases, and it has been an offense, and perhaps even a peril, to speak of them openly to society at large. Hence exists a universal ignorance about them. Except to their victim, they are for the most part only a name; and a large proportion of their victims are never told that they have them. But to such an extent are they found to be responsible for suffering in innocent human lives, and so powerful is their effect in operating toward race degeneracy and race extinction that in all of the most advanced countries a movement is going on for the enlightenment of the people concerning their destructive workings. Whatever danger there may be in openly exposing them, the danger of silence is believed to be far greater.

Following the wording of my subject let me refer briefly first to the extent of these diseases in society. While we have no absolute statistics except those of the various armies and navies of the world, the experience of physicians who have made these matters a subject of investigation agrees everywhere, so that in a general way it is perfectly well known to the medical profession to what extent these diseases prevail, the question of exact percentage being the only one in doubt or dispute.

In a recent symposium at the New York Academy of Medicine, it was stated that 60 per cent. of all males contract gonorrhoea at some time in their lives. This was the lowest estimate. In the large cities, the proportion was reckoned as high as 90 per cent. Morrow, in his book on the "Social Diseases and Marriage," estimates the percentage to be 75 per cent of all males. Anyone who follows the modern method of obtaining the exact medical history of his patients will get results similar to the above—that is, from 60 per cent upward. The United States Army statistics show an average of ten per cent. of the men in the hospitals each year on account of gonorrhoea. In the regiments that went to the Philippines, over 20 per cent. were in the hospitals with gonorrhoea in a year. The percentage in the United States Army is considerably higher than in that of England, France or Germany. Since gonorrhoea is one of those diseases, like pneumonia, diphtheria, etc., in which one attack confers no lasting protection against another, it is impossible to draw any absolute conclusion from the army statistics.

The most surprising result of recent medical investigation is the discovery of the extent of gonorrhoea among women. Noeggerath states that of every 1,000 men married in New York 800 have had gonorrhoea from which the great majority of their wives have been infected. In other words, he believes that over one-half as many women as men suffer from this disease. In the public hospitals of the leading cities of continental Europe where a routine examination is made of women from all classes who come there for confinement, it is found that in from twenty to twenty-five per cent. of the cases, gonorrhoea exists. While the initial course of the disease in women is much milder than in men, often so mild as to be disregarded or even unrecognizable, the subsequent extension of the disease into the uterus and adnexa, which frequently occurs, makes it a much more serious trouble with complications which will be referred to subsequently.

The extent of gonorrhoea in the social body is not limited to adult men and women. It infects the eyes of the new-born child, and runs a virulent course, causing often complete loss of vision. According to Neisser, there are in Germany 30,000 blind persons whose loss of vision is due to gonorrhoeal infection. From 25,000 to 50,000 similar victims are found in the United States.

A new fact in the natural history of gonorrhoea is its occurrence in female children of all ages, due to contagion from an infected father or mother. According to Morrow, family epidemics are very frequent, one of the children sleeping in the same bed with the parent suffering from the disease. The gonorcoccus appears to have an extraordinary vitality and infectivity outside of the body. The environment of any infected person is full of

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the poison. Numerous well authenticated cases of water-closet infection are on record. A single case of vulvo-vaginitis introduced into a children's hospital has occasioned an epidemic. In many of the children's hospitals such epidemics among the female children have been recently reported by Koplik and others, due often to the use of the common bath or to the napkins contaminated by the fingers of the nurses in passing from one child to another. One remarkable epidemic was reported by Skutch in Posen, Germany, where 236 little girls from 6 to 14 years of age were infected with vulvo-vaginitis of gonorrhœal origin due to the use of the public bath. This form of trouble in girls frequently results in gonnorrhœal opthalmia and gonorrhœal rheumatism. Morrow thinks that many cases of metritis and salpingitis occurring in virgins and young women at the age of puberty or later are due to such an antecedent trouble which had been overlooked or forgotten.

Syphilis appears to infect from one-fourth to one-fifth as many men as gonorrhoea. This at least is the army record. In Berlin twelve per cent. of males have been estimated as syphilitic; in Paris from thirteen to sixteen per cent. In other words, more males have syphilis in Paris than have tuberculosis. Osler remarks that for communities in general there are probably more families with the luetic taint than with the tuberculous. Certainly four times as many men have gonorrhoea as have tuberculosis, and from these statements concerning the two chief venereal diseases, we can get some idea of the extent of the black plague, as venereal disease has been called, as compared with that of the white plague, and it is evident that the total morbidity of the black plague is enormously greater. The total mortality of the black plague is difficult to estimate, because to spare the feelings of the family, fatalities from this cause are registered under the name of peritonitis, apoplexy, paresis, etc., but if we should add the still-births and miscarriages to this cause, the total mortality would be very great.

The importance of venereal disease from the sociological aspect lies in their crippling effects upon the individual, and in their interference with the continuation of a sound stock. The new knowledge regarding these diseases shows that in both of these respects they are much more serious evils than we have hitherto supposed. We have no time here to take into consideration the ethical side of the question, the great unhappiness, discord, deceit, disappointment, shame and remorse which are occasioned by these diseases in a peculiar degree. We will look only at the physical consequences not in detail, but in general outline. Gonorrhoea used to be regarded as a disease to be laughed at—of no more consequence than a cold. But the knowledge that has come to us within the past few years concerning all the organs and tissues of the body that may be invaded by the gonococcus requires us to class this germ along with the bacillus of tuberculosis, leprosy or syphilis as an agent of general systemic infection. The gonococcus has been found not only in the genito-urinary tract, but also in the brain and cord, endocardium, pleura, liver, spleen, kidneys, joints, periostea and skin. For example, cases of acute inflammation of the spinal cord, acute myelitis, have been reported following gonorrhoea, by Gull, Leyden, Ullman, Raymond and Hayman. Morrow says—"As a result of modern investigation, it may be positively affirmed that the gonococcus is susceptible of being taken up by the blood vessels and lymphatics and that it may infect almost every organ in the body."

As I have already stated, the gonococcus is found to have a most persistent vitality in the body and may lie dormant in the system for years—in the opinion of some for a life-time. Thus, in an apparently cured case, gonococci may linger in an enfeebled condition in crypts behind an organic stricture. Yet, in case of marriage, these gonoccoci are able to set up an active infection in the wife, and by this process revivified, to again innoculate the husband with their original intensity. Once infected, therefore, a man can never be sure that he is free from the germ, nor can he tell in what serious disability to himself the infection may eventuate. He is liable not alone to organic strictures of the urinary canal, to inflammation and enlargement of the prostate, inflammation of the seminal vesicles and ducts—producing permanent sterility, but to diffusion of the germ throughout the body, setting up it may be a chronic joint inflammation, an inflammation of the heart, as an endo-, myo-, or pericarditis, an inflammation of the pleura, of the brain or cord, or a general septicemia, many

examples of which are on record. Above all the chances appear to be one in two that if he marries he will infect his wife, and that the infection for her is almost certain to be a much more serious matter. The discovery of the damaging and dangerous complications of gonorrhoea in women is a recent addition to medical science, furnished us by the gynecologists. Thus, according to Morrow, from forty to eighty per cent. of cases of endo-, meso-, and peri-metritis are of gonorrhoeal origin. The same is true of nearly 100 per ent. of cases of salpingitis. Wyeth states that fifty per cent. of all operations in gynecology are due to the existence of gonorrhoea. Grandin makes it sixty per cent. Price says that in over 1,000 sections for pelvic inflammation ninety-five per cent. were attributed to gonorrhoea, there being a clear history in ninety-five per cent. of these.

It is perfectly evident that in every population where gonorrhoea exists, thousands of women are made invalids for life through this disease and many die. But the infection does not stop with the wife. I have already shown how the infants and children are infected and made the statement from Morrow that family epidemics were not uncommon.

Fournier and others declare that gonorrhoea causes fifty per cent. of sterile marriages due chiefly to inflammations of the female genital tracts. In France, out of ten million families, two million are childless, and if Fournier's statements are true, then a million families are deprived of children through this infection. Certainly, Janet is not far out of the way in declaring gonorrhoea to be the great pest of our age.

The sequels of syphilis have never been fully understood before to-day. They are, indeed, so many that only a few of them can be mentioned in a recital of this sort.

The milder effects are such as the falling of the hair, the exchange of a clear skin for one disfigured by eruptions of many sorts, eye inflammation with impaired vision, ear inflammation with impaired hearing, offensive nasal discharges, bone sores and sloughing sores in many superficial parts. The deeper effects are those upon the viscera in general and especially the nervous system, which comes constantly under the observation of the neurologist and furnishes a large proportion of his cases.

Syphilis causes over twenty per cent. of all cases of insanity in the form of paresis. In Connecticut alone, there must be nearly 1,000 paretics.

Ninety-five per cent. and perhaps one hundred per cent. of all cases of locomotor ataxia is another by-product of syphilis.

A third large class of cases is comprised under what is known as cerebral syphilis which form the bulk of the apoplexies and hemiplegias occurring under forty-five years of age. Spinal paralysis is suffered by yet another considerable group of syphilitics. Involvement of the membranes of the brain and the cranial nerves is often seen. The tertiary lesions are to a large extent disabling, most of them entirely disabling man. If it is true that one in seven of adult males is syphilitic, there would be nearly 30,000 syphilitic men in the State of Connecticut of whom from ten to fifteen per cent—3,000 to 4,500—develop tertiary lesions. Evidently the economic loss to society from syphilis is very great. E. E. Mahon in the *British Medical Journal,* 1899, refers to this aspect of the problem as shown in the statistics of the British army and navy and states that the venereal diseases seriously impair the efficacy of these forces. Thus, in 1897, the number of days of service lost by the presence of these diseases was for primary syphilis, 96,339; for secondary syphilis, 49,768; for gonorrhoea, 77,054. Of course, tertiary cases of syphilis drop out of the army entirely and so are not brought into these statistics.

Syphilis does not prevent conception nor the production of healthy children, but it either may kill the foetus or poison it in various ways. Forty per cent. of all miscarriages are due to syphilis. In sixty per cent. of infected cases the child dies before or at birth. The remaining forty per cent. live to grow up to varying ages as heredo-syphilitics. In some cases the disease manifests itself during first years after birth—from the third to the thirteenth. In a list of over 200 cases seen by Fournier, the age of appearance of active symptoms in the greatest number of cases was the age of puberty. The symptoms of hereditary syphilis, however, are not necessarily those of acquired syphilis. On the contrary, there are many of them peculiar. Hereditary syphilis is a devitalizing poison. Its subjects lack vitality, and are poorly developed, both physically and mentally. Frequently they are rickety. Fournier,

Hutchinson and Morrow affirm "that certain of those hereditary morbid states formerly referred to scrofula and tuberculosis are really the expression of the syphilitic diathesis." While there is no proof that the virulent principle or germ of syphilis is transmitted to the third generation, there is no question according to Morrow that the condition of impaired vitality, dystrophy and degeneration is carried on. Tarnowsky claims that "in certain rural localities of Russia where syphilis constitutes an endemic disease, seventy-five per cent. is transmitted in family life, and that the marriage of heredo-syphilitics is one of the principle causes of degeneration of the population." Upon certain races syphilis has a most fatal effect. Thus it is asserted that it is due to syphilis chiefly that the native people of Hawaii have been reduced to one-fourth of their number during the past century. The people of Korea are represented as having degenerated physically and mentally into an almost worthless type of humanity through syphilization.

When we review the vast extent of the venereal diseases, their damaging effects upon individuals of both sexes of all ages and their corrupting influence upon the seed of humanity, it is difficult to conceive of any subject more important to society than the prevention of the spread of these secret poisons which have doubtless in the course of the ages wiped out many stocks of people. It has been contended by some that there is no need of interference in this matter, since these diseases are weapons of nature, to inflict punishment upon the immoral and to eliminate the morally weak. This is a doctrine hard to believe in view of the fact that so many pure and innocent women and children are involved. Morality has been evolved largely through intelligence and these diseases are incurred in ignorance, both of their existence and their results. Morality will be greatly increased and strengthened by enlightenment, for morality is to a large extent enlightened self interest. Just as the most powerful agent in the reduction of alcoholism, which through all the preceding centuries has been so universal and terrible an evil, has been the diffusion of exact information among the people regarding the alcoholic diseases, and the invariable impairment of every kind of human capacity, physical, mental and moral, by its daily use in anything but physiological amounts; similarly, I believe the most potent means of diminishing the venereal diseases will be the spread of exact information as to their disastrous results, immediate and remote, upon the human system.

HOW SHOULD WE DETERMINE ERRORS OF REFRACTION, AND WHAT IS THEIR ACTUAL RELATION TO GENERAL CONDITIONS?

By OSCAR WILKINSON, A. M., M. D.,
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It is with deep regret we take issue with one who is no longer amongst us, but the views on the above subject of one of the best-known ophthalmologists in America (the late Dr. St. John Roosa), published in the *Journal American Medical Association,* February 13, 1909, page 543, are so much at variance with what is usually taught and practiced by our best men that an answer should be made to some of them. This is not done in a spirit of criticism, nor with a desire to detract from his enviable reputation, but in order that the truth might be presented as seen by the so-called *radical* men. We will endeavor to take them up in the order in which they appeared.

Exaggerated Views of the Results of Eye Strain.—Under this heading, Dr. Roosa says: "Ophthalmologists in general find glasses a remedy for ocular defects only, and believe the benefits of glasses are generally limited to the correction of ocular defects." He asks the indulgence of the general practitioner and of the younger ophthalmologists while he presents what he considers "safe and sane views" on the subject. He deprecates the exaggerated claims of the "radical" ophthalmologists, and says that properly chosen glasses will often relieve "headache, certain forms of conjunctivitis, blepharitis, ciliaris, mild forms of lachrymal catarrh, diplopia, vertigo and nausea." These are, in his opinion, the only conditions that the general practitioner should expect to be relieved by correction of the errors of refraction. He was also of the opinion that the general neurasthenic conditions, migraine and chorea, are not at all influenced by the use of glasses.

Dr. Roosa's position is as untenable as that of our most "radical ophthalmologists;" extremes are always to be avoided, but here the lesser evil is certainly with the radical man.

There is scarcely a chronic inflammatory diseased condition of the eye that is not improved by the use of correcting lenses where an error of refraction is found, and the recurrence of various diseases (recurrent iritis, hordeolum) is deferred or entirely prevented by the use of correcting lenses. Oculists who do accurate refractive work no longer doubt the beneficial effect of correcting lenses in many cases of migraine, choreaic tic and certain forms of neurasthenia.

The Art of Fitting Glasses Not of Superhuman Difficulty.—Here Dr. Roosa says: "Any well educated practitioner, by careful study and large experience, such as is obtained in special hospitals and clinics, may expect in a few months to be able to fit glasses to the eye properly, and also to eliminate those conditions in which glasses will be of no service."

This teaching would not need refutation, except that some few might be deluded thereby. If the art of fitting glasses is so absolutely simple that it may be acquired by a medical practitioner or any well educated man within a "few months," and if only the "ophthalmoscope, ophthalmometer and test-letters" (see sequelæ) are needed, why not relegate the fitting of glasses to the optician? If cycloplegia and retinoscopy are of no benefit; and the optician has had as good fundamental education, and has the opportunity of examining more persons than the man of a few months in the large clinics, why is he not competent to fit glasses?

We regret to note that so eminent an oculist as Dr. Leartus Connor (*Journal American Medical Association,* April 10, 1909) is of the same opinion that Dr. Roosa was in regard to the fitting of glasses by the practitioner, and gives as reasons for this that "he (practitioner) may be able to do the medical work now in the hands of the optician * * * and strengthen his hold on families."

In the first place, all good practitioners are too busy to do this work, and if they undertake it, it will be as a side line. They cannot do it properly, and he who undertakes it will not "strengthen his hold on families," but, on the contrary, will destroy their faith in him. Recently I have had two patients who had glasses improperly prescribed by a family physician; both of these have lost faith in him because he attempted what he was not capable of doing.

The only excuse a practitioner could have for fitting glasses would be that he lived in a district remote from a competent specialist. Here his duty is plain—he should prepare himself as best he could, and then do the work, the patient understanding that he did not claim to be an expert.

The only way to stop the fitting of glasses by opticians is to do accurate work. Many patients have said to me that they got their glasses from an optician because they had been to Dr. ——, and his glasses gave them no relief. When experienced oculists do such work, what can you expect from the busy practitioner? Can he be expected to go into each detail and eliminate every element of the refractive complex?

Dr. Roosa further says: "Radical ophthalmologists * * * insist that if each human eye be not fitted with mathematical correctness, or as nearly so as the present state of ophthalmic science admits, dire results will follow not only in inability to use the eyes for a normal period, and, what is far worse, in serious general diseases of one variety or another which may ruin a life."

I do not claim that every refractive error must be corrected, or that every muscular deviation must be adjusted, for although having 1 D. of astigmatism in one eye and 0.50 D. in the other, both at oblique axes, with two degrees of right hyperphoria, I have not worn a correction for ten years; but this same defect in persons differently constituted would, more or less, incapacitate them for work.

Emmetropic Eye Only Nominally Normal.—Here Dr. Roosa says that abnormal refraction is not actually reached "unless it is of a degree higher than, for instance, 2 D., or unless corneal astigmatism is added to it." To those who do accurate work that statement does not demand contradiction; any busy oculist sees patients every day who are refutations to it.

In order to obtain a more correct idea of the proportion of hypermetropes using a correction of less than plus 2 D., I have looked over my last one thousand prescriptions and found that 84.9 per cent. of those for hypermetropia were for errors of less than 2 D., while 14.1 per cent. were for errors of 2 D.

or more. Thinking this percentage might be too high, I consulted the files of one of the busiest opticians in this city, and out of one thousand prescriptions for hypermetropia, 84.7 per cent. were for corrections of less than 2 D., while only 14.3 per cent. were 2 D., or more of hypermetropia. If we should go by the teaching of Dr. Roosa, 84 per cent. of the hypermetropes in Washington should throw away their glasses. Farm hands, drivers, or those whose occupation does not demand close work may go through life with a defect of 2 D., without inconvenience, but that is not the class of persons who come to us with the various asthenopic and neurasthenic conditions.

Causes of Asthenopia.—Under this heading Dr. Roosa makes two of the most astounding statements I have seen in ophthalmological literature in the past decade. First, he says: "I do not find any value in prisms or in decentered glasses except in cases of paralysis of the ocular muscles * * * If the profession will abandon all attempts to measure the power of the ocular muscles, except in cases of paresis and consequent diplopia, and confine the work of fiting glasses to correction of the error of refraction * * * ophthalmologists will not suffer the opprobrium which attached to the men who found in ovaries and floating kidneys all the diseases of the female system."

The examination of the ocular muscles is of as much importance in each case as the examination for astigmatism. In every case examined by the writer within the past ten years the condition of the ocular muscles has been as carefully noted as the error of refraction, and the constant repetition of this convinces him that the extrinsic muscles are an integral part of the asthenopia in a great percentage of cases. Where certain muscular defects are present (hyperphoria and exophoria) their correction is often as necessary for comfort as the astigmatic or hypermetropic correction.

In this city where a large percentage of our clientele are professional men, teachers and government clerks, and thus often working in the offices during the day and in the schools at night, the nature of their work is so exacting on the eyes that a more careful correction of ocular defects is demanded; hence I consider an unusual opportunity is offered for the study of the effects of correction, in the most minute detail, of errors of refraction and muscular anomalies. I have records of hundreds of persons who, without their prismatic correction, would be unable to do the amount of work they are now comfortably doing; and have repeatedly given the same correction for the error of refraction combined with the necessary prismatic correction and by so doing made the patients comfortable where before they were miserable. This has happened so often that I am as positive of its effects as of those of the correction of astigmatism.

The Doctor also says: "The fact is, that if glasses do not improve the vision, and are not comfortable on the eyes they are absolutely of no use." The writer has records of more than a thousands examples of patients made comfortable by the use of glasses which did not improve the distant vision. It is the exception that a + lens will improve the vision in a young hypermetrope whose hypermetropia is less than 2 D.; still, there are thousands of hypermetropes who are to-day wearing lenses from + .75 to + 2 D., with perfect comfort, who would be miserable without their use.

The asthenopic symptoms of a hypermetrope of 1.50 D. may be as serious as those of an astigmatic, and he needs his correction just as much, when the conditions demand, as for any other ocular defect.

Another statement made by Dr. Roosa which does not seem justified by facts is: "It is by no means an uncommon thing * * * to see myopia steadily decrease in degree, from fifty years or more on, so that weaker glasses may be worn." As a matter of fact, I have never seen myopia decrease. In those cases in which there has been an apparent decrease of myopia, it was, in my opinion, due to the fact that they had been rendered hypermetropic by wearing an over-correction, and as the accommodation lessened they could not endure the over-strong myopic lenses, and the weaker ones were demanded. If the eyes had been examined under a cycloplegic and with the retinoscope (neither of which he used) at the different ages, no change would have been found.

Proper Use of Tenotomy and Prisms.—Of this Dr. Roosa says: "The treatment of the ocular muscles by systematic exercise with prisms has been pretty generally abandoned, as it deserves to be, except in cases of strabismus

in which the stereoscope is very useful and even essential after tenotomy, to secure binocular vision."

In cases where prisms are necessary to relieve certain symptoms, he thought that, "a thorough operation on the offending muscle (provided the operator is sure to operate on both of the fellow muscles) will now as always accomplish all that can be done in the relief of ocular symptoms." He not only advised the tenotomy of both muscles, but also the stretching of the opposing muscle as advocated by Panas.

Here a word of warning is also necessary lest the conservative become more radical than the radical. In exophoria of ten to fifteen degrees of deviation a tenotomy of one external muscle will give all the relief required. In cases of exophoria of low degrees, and where the symptoms are marked and are not relieved by the use of prisms, some operative measure is demanded, and a double tenotomy would leave the patient in a worse condition than before the operation. Some of our best men who *do use* retinoscopy and who *do* order lenses for less hypermetropia than 2 D., and order lenses that do *not* improve the vision, would not dare to be so radical as to do a double tenotomy for an exophoria or an esophoria.

The too free tenotomy, even in cases of strabismus of both internal muscles, has frequently, as is well known, caused external deviation, which is much more difficult to correct than the original defect.

Determination of Refraction.—Here Dr. Roosa would deprive us of the positive means of determining the exact refraction of an eye. He advises against the use of a cycloplegic except in extremely rare cases; and calls retinoscopy "that ancient method of determining the refraction," and says: "Largely counselled by the late Dr. E. H. Loring, I had abandoned it as 'the most difficult and least satisfactory of the methods of determining the refraction of an eye, which contributes nothing that cannot be more easily and more expeditiously performed by the upright image.'" He further says: "With the ophthalmoscope, ophthalmometer, and test-types we have all the means, in my judgment, that are in any sense required for the work of selecting correcting glasses."

The advice to abandon the use of the cycloplegic and of the retinoscope is entirely contrary to the teachings and experiences of American ophthalmologists. Retinoscopy combined with a cycloplegic is *the accurate* means of determining the error of refraction; and to abandon them and to abandon the examination of the ocular muscles would place us on a plane with the refracting opticians.

Where one does not prescribe a lens unless the defect is a 2 D., or more of hypermetropia, and never use a glass unless the vision is improved by it, he should not expect results in neurasthenic conditions. It is now well known that the lower degrees of refractive error are those which cause the most annoying symptoms, and if those are omitted the real work of scientific refraction is abandoned. It can be readily understood how one might not need anything but the ophthalmoscope, ophthalmometer and test-types when the lower degrees are neglected; and if we eliminate these and the muscular examinations one might expect a general practitioner to learn to determine the gross errors of refraction. Our best medicinal remedies improperly handled become inert or harmful. Every element of eye strain must be considered, whether it is astigmatism, hypermetropia, myopia, or the various imbalances of the ocular muscles both at a distance and near.

Some claim to be able to determine refractive errors by the use of the ophthalmoscope; this is quite possible with the trained oculist if we are to exclude low degrees of defect, and the eye is under the influence of a cycloplegic; but it is absurd to claim accuracy in young subjects not under a cycloplegic. The writer would feel that he had been derelict to duty in prescribing a lens for a patient suffering with serious asthenopic symptoms without first examining with the retinoscope, under a cycloplegic, unless there were some contra-indications.

When a practitioner sends a patient to an oculist he wants to know whether the conditions are due to the eye or not. He wants the oculist to be able to say *it is*, or *it is not*, the eye. No man can answer that question with anything more than a guess, who does not use a cycloplegic, the retinoscope, and examine the extra-ocular muscles; and when refraction passes into the hands of the practitioner of two or three months' special study, this most exact

branch of medical science will deserve the opprobium of being called "inaccurate" by editorial writers.

We owe it to the profession, to the patients, and to ourselves to do our work accurately, and, failing in this, sooner or later we shall be subjected to just criticism and deserve the reflection cast upon us by the Editor of the *Journal* (April 24, 1909) when he said: "The decision of the exact ocular defect, even by the best ophthalmologists, is not absolute and * * * is no more an exact science than is internal medicine."

Progress in medicine is bound to be made by men who do special things, and when ophthalmologists are willing to make a specialty of refractive work, then the public will awaken to a sense of its importance and cease flocking to opticians.

When "thoroughly educated and widely experienced men" learn to devote the proper time to, and use the proper appliance for, determining the errors of refraction, and eliminate for the internist the symptoms arising from refractive defects, and when specialists in all lines learn to do their work accurately and thoroughly, then, and not until then, will the practitioner and the public know what to expect and what to demand. Not until then will opticians stop fitting glasses, and not until then will the spurious sciences and isms cease to flourish.

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OBSERVATIONS ON TUBERCULAR HIP JOINT DISEASE.*

By L. SEXTON, M. D., New Orleans, La.,
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Tubercular hip joint disease is a very common affliction among poorly housed and badly nourished children of our cities. This trouble has been prevalent for many years under names of white swelling, morbus coxarius, coxitis, and hip joint disease.

Tuberculous disease of the hip joint has been confounded with other inflammations of the joint and bones, such as osteomyelitis, rheumatism, gout and arthritis deformans, but is easily differentiated by the tuberculin and other tests.

Mode of Infection.—Tubercular hip disease may have its starting point from any injury, or it may come on spontaneously, but, in either event, there is infection with the bacillus of tuberculosis. This bacillus is supposed to gain entrance into the joint through the lymphatics after drinking tuberculous cow's milk, and experiments prove that the bacillus may also be admitted through the blood current. That there are other sources of infection as tuberculous food is very probable.

Tuberculous hip joint disease has a predilection for strumous children, but we often find robust and healthy children beginning to limp without traumatism or rheumatism, finally developing all the symptoms of the tuberculous hip.

The disease may assume the form of osteoarthritis or synovitis. If it happens in the knee joint, where it is superficial and easily examined, you can distinguish between the two much more easily when the hip joint with its large covering of muscles is involved.

Prognosis.—Billroth said many years ago that 27 per cent. of tuberculous hip joint cases died within sixteen years under the old plan of management. Konig says that 16 per cent. of 117 cases operated on for joint tuberculosis died within four years after the operation. He found that 60 per cent. of these cases have secondary lesions and that 56 per cent. of the cases dying of Pott's disease had tubercular deposits in other organs of the body. Under present management results have been very much better.

Symptoms.—Symptoms of tuberculous hip are pain, often referred to the knee joint, deformity, and atrophy of the muscles of the thigh; then anterior lumbar curvature, with a tendency of the pelvis to tilt upwards on the diseased side, and adduction with shortening of the lower extremity as the disease progresses.

The limb of the affected side is usually flexed and may be abducted or adducted in varying degrees. When the patient is lying down on a flat table the spine is arched anteriorly. In each case the loss of range of motion of the hip on the affected side is one of the first symptoms noticed.

Flexion of the leg is a common diagnostic symptom of tubercular hip disease. Muscular wasting from non-use causes the buttocks to flatten and perish. Atrophy of limb on account

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of hip joint disease comes from growth cessation and non-use. Shortening of the head of the femur may be produced both by cessation of growth and by absorption of the acetabulum and pathological dislocation of the hip joint backwards and upwards.

The cancellous ends of bones are the ones most often attacked by the tubercle bacilli The epiphysis, the medullary canal or shaft just under the periosteum may be the point of beginning of any tuberculous joint. The tubercular process may form an abscess in the neck or body of the bone; in fact, the disease may involve any portion of the joint; the synovial membrane and ligaments may also become eroded and pulpy.

The acetabulum is likewise affected by being increased in size and depth. The irritation of the diseased process brings about contraction of the muscles, keeping the limb in a flexed position, and usually causes inversion or eversion of the foot, as the case may be.

Owing to the fact that the knee is supplied by the anterior crural, sciatic, and obturator nerves, the pain is as often located in the knee joint as in the hip; hence, all knee joint pains cause us to think of hip joint disease at once.

At first the thigh seems to be wasting, and the leg may apparently be lengthened. The pelvis is tilted upward on the affected side; there is often spinal lordosis (anterior lumbar curvature) with lateral curvature higher up—the convexity being towards the diseased side.

Early rigidity of the hip joint is noted; any attempt to flex the limb on the abdomen raises the pelvis from the examining table.

Nature effects its cure in hip joint disease by fixation, adduction and flexion. From this fact it is natural to infer that if the joint is put absolutely at rest without this flexion and adduction it ought to get well without this adduction or great deformity.

When Dr. Lorenz was in this country, the object of treatment of his cases was to get the joint well even with ankylosis which could be later brought into at least partial use. Now, following the teachings of this great specialist, it would seem advisable to fix the joint just as soon as possible after the discovery of the disease.

There are many appliances for fixation, traction and protection accomplished by different methods.

Any apparatus intended for the cure of hip joint disease has to be designed with two objects in view, namely, the prevention of adduction and flexion of the diseased limb. This mechanical proposition is met in some cases by applying long zinc oxide adhesive straps to the limb, (it previously having been shaved) from the middle portion of the thigh down around the heel, returning on the opposite side of the thigh to the point of beginning. A small block with a hole in it for rope to pass through is placed just under the heel wide enough to prevent these adhesive straps from pulling together so as to cramp the ankle.

If the mattress is hard the adduction can be partially overcome by placing under the limb a wide piece of plank upon which is placed, on the inner side of the limb, a long sand bag extending from the perineum to the ankle. This adduction can also be obtained to a certain extent by the application of the zinc oxide plaster in such a way as to make the traction greater on the inner side of the limb, having the patient's body so placed on the bed that when this traction is made it will evert the limb.

Now, the matter of fixation of joint surfaces may be obtained by a plaster cast which extends from the foot on the diseased side up to the ensiform cartilage, making a stiff dressing with the hip joint entirely surrounded in one continuous splint. This affords ample protection and fixation. As a matter of course, any apparatus of this kind should be supplemented with crutches when the patient tries to walk.

The zinc-oxide plaster extension apparatus can be applied to the limb before the plaster cast is put on so that the weights and extension can be used as soon as the patient retires.

To recapitulate, the plaster of Paris band meets the indication for fixation while the zinc oxide straps traction and elevation of the shoe sole on the opposite foot and crutches meet the ambulatory indication for treatment.

There is difference of opinion as to whether a moderate amount of motion in tuberculous hip joint is not better than absolute fixation. In a rather limited experience it would seem to us that the less friction movement of two

diseased surfaces, the better for the part involved.

Some criticism has been made of the plaster of Paris cast, that it keeps the limb so still that it encourages disuse, thereby increasing the atrophy of the part. Granting this to be the truth, which certainly is not always the case, it would perhaps not take a treatment of over six months to relieve or greatly ameliorate the condition. Whatever is lost in growth in this short period of time can be readily overcome by massage, gradual Swedish movements, vibratory and other expedients for developing muscular activity. This muscular atrophy dwindles into insignificance when compared to the tubercular processes which are the main points for correction. Traction, when applied to a sound limb, increases its length very materially; when applied to a diseased limb, not only prevents shortening, but keeps the two diseased surfaces pulled apart.

Under the above outlined plan we have had three cases brought to successful terminations with moderate degrees of motion in two, and ankylosis in one.

There is nothing original claimed in the plan outlined here, unless, perhaps, it is the method of roller and extension that makes the upright to which the pulleys are attached applicable to almost any bed which can be held in place by a couple of ordinary one-inch screws. The fixation of the hip is obtained by the plaster of Paris; out of door method of treatment is obtained by a couch or roller chair on the gallery (weather permitting); the extension of weights or pulleys can be utilized half or all the time as the case may require.

Up to 1875 the long Liston splint used in fractures was depended upon. Since that time fixation forms for the body and the same forms of extension have taken the place of the Liston splint.

It is with this treatment by extension and counter-extension that this paper has to deal. I have often found it impossible to adapt the Levis apparatus to the bed used by the majority of families, as all cases cannot be treated at the institution with the metal beds and attachments. I have devised the upright piece of steel (which was shown) and which can be screwed to any bed with a foot board. By running the extension rope under one pulley and over two, any weight can be attached and suspended free of friction with the bed.

The foot of the sound side can be depended upon for the counter-extension or for keeping the weight from pulling the patient too far down in bed. It may be necessary at times to pass a wide padded band over the perineum and attach it to the head of the bed.

The amount of weight to be used depends upon the tension of the muscles to be overcome. The weights should be gradually increased until the shortening is reduced. Under this treatment the curvature of the spine corrects itself about as soon as the deformity of the limb. This weight is worn all night and a greater part of the day, but the patient is usually allowed to move around in the open air and to move about in rolling chair while keeping the hip as still as possible. This is often done by a spica bandage around the hip.

Very often a curvature of the spine or tubercular process manifests itself in the vertebral column in cases of tubercular hip trouble. It is just as important to extend or pull these diseased vertebræ as it is to extend or to fix the hip joint.

This weight and pulley, though applied to the leg primarily, is just efficient in extending and resting the spinal column.

Recurrence.—After the hip joint seems perfectly well, there may be a metastasis in which tuberculous process may set up in some other organ of the body.

Because tuberculosis in the hip joint may be arrested and all evidence of the disease, except ankylosis and atrophy, seems to disappear, it is important to keep up the forced feeding, fresh air and rest for at least six months after the last symptoms of the disease have disappeared.

As a matter of course, forced feeding and the best hygienic surroundings are just as essential in the treatment of joint tuberculosis as in that affecting the lungs.

Room 610, *Canal Bank Bldg.*

To relieve entero-colitis or cholera infantum, cleanse intestinal tract with calomel and saline or castor oil; prescribe an easily digested, non-irritating diet. Instead of using opiates, relieve muscular rigidity and pain by using antiphlogistine as hot as can be borne over entire abdominal wall.

ON EDITORIAL REVISION OF TITLES OF MEDICAL PAPERS.*

By FIELDING H. GARRISON, M. D., Washington, D. C., Assistant Librarian, Surgeon General's Office.

Dr. John S. Billings ,to whom all workers for the advancement of medicine are so much indebted, once gave the following rules for the composition of a medical paper: "1. Have something to say. 2. Say it. 3. Stop when you have said it. 4. Give the paper a proper title." These laconic rules are not to be looked upon as a mere *ipse dixit,* but represent the summation of years of close observation on the part of an experienced bibliographer. Concerning the fourth rule, with which we are specially concerned, Dr. Billings said on the same occasion that "every article which is worth printing is worth a distinct title, which should be as concise as a telegram and be printed in a special type. If the author does not furnish such a title, it is the editor's business to make it and he should not be satisfied with such headings as "Clinical Cases," "Difficult Labor," "A Remarkable Tumor," "Case of Wound, with Remarks." This is in some sort the gist and conclusion of the whole matter, and at the time that Dr. Billings wrote—the International Medical Congress of 1881—there were many medical papers to which his criticism was applicable. To-day the extensive improvements in medical education and the methods of medical journalism have had such effect upon medical literature that apart from occasional ambiguity or obscurity, little exception could now be taken to the titles of medical papers in general. It may be of interest, however, to expand the theme a little further, by way of a theoretical discussion of the subject.

The real test of the literary skill of the average practitioner or surgeon is not so much in the writing of learned disquisitions as in giving a correct and clearly stated record of his clinical experiences. The well-reported clinical case is the basis of medical literature, and, strange as it may sound, is quite as important as certain kinds of laboratory work, and sometimes even more so. As Professor Clifford Allbutt puts it: "Much of the work which is done in our laboratories and dignified, not improperly perhaps, with the title of research, much plotting of curves, much watching of levers and thermometers, nay not a little morphorlogical dissection and cabinet-making, are really little more than clerk's work," for "Bundles and files of facts are not science." What makes them science is the synthetic or creative imagination which finds the general laws lurking behind related facts. The busy practitioner seldom reflects that in properly diagnosing an obscure or difficult case, he is applying the same analytic and synthetic methods which are at the basis of all the great movements of scientific endeavor. Such are the treatises of Hippocrates and Galen, Harvey's *De motu cordis,* Morgani's *De sedibus,* Sydenham's, Addison's, Bright's, , Virchow's descriptions of disease the clinical methods of Auenbrugger, Laennec and Skoda, the masterpieces of Darwin, the demonstrations of Jenner, Pasteur, Laveran, Koch and Lister, and to come to our own country, the work of William Beaumont, of Daniel Drake, of Reginald Fitz and of Walter Reed.

To begin with, assuming a contributor to have sent in an acceptable paper, what should be our criterion of a suitable title "as concise as a telegram?" The titles held up for censure by Dr. Billings do not fulfil this condition because, at best, they are only glittering generalities that tell nothing in particular about the real content of the papers they represent, very much as if a telegram announcing the death of a near relative should say no more than "a relative of yours is dead." What we want to know in each case is the definite disease, the kind of labor, the site and origin of the tumor, the locality of the wound, etc., and data of this kind can only be obtained by finding what the Germans call the *Schwerpunkt* or center of gravity of the subject-matter. In printed books of earlier centuries, title pages were, as we know, often lengthy and rambling, not to say maundering, and even now we see things of this kind, titles which remind us of the tendency in old plays to announce the state of affairs at the outset of the dramatic action by means of some tedious monologue spouted by one of the characters. Fortunately for the modern world, division of labor and the enormous demands made upon our time, have even had a salutary effect upon play-writing, and, to-day, a competent stage-manager demands that in any "well-made play" the tiresome monologues should be set aside in favor of crisp

*Read before the annual meeting of the American Medical Editors' Association, Atlantic City, N. J., June 5, 1909.

"lines that create atmosphere" and "lines that indicate character." This might well be the ideal for the title of a modern medical book or journalistic contribution. It should dramatize the subject matter of the author's work with a definite eye to "values," aiming especially at precision and concision, so as to be, in short, a guide post to the intelligence or ignorance of the reader. In the matter of reporting ordinary clinical cases, all this is very simple, and good models can be found almost anywhere, particularly in the Latin indices of cases in German hospital reports. These tell us exactly what we want to know, the definitive nature of the disease (when ascertained), its origin or location and the result of treatment, even though it be "exitus lethalis." For statistical as well as clinical reasons, these details of "visum et repertum" are of capital importance.

In all surgical conditions, as appendicitis, hernia, intestinal obstruction, tumors, extra-uterine pregnancy, middle-ear disease, etc., the statistician wants to know if there was an operation and whether it was successful or not. The alienist, the bacteriologist, the eye, ear, or nose and throat specialist, the gynecologist, the obstetrician, the pediatrist, the orthopedist, the railway surgeon, the dentist, will, each and all of them be looking for features in medical titles that appeal to them as specialists. If the reader be an anthropologist, a medical topographer, or a public health officer, he may have an eye for the racial equation of the patient or the geographical *locale* of the disease; and it is of special importance to the military or naval expert to know of pathological conditions in a body of troops or on board ship. The occupation of the patient, the sources and modes of transmission of a disease, the distribution of a disease in space and time, the corroboration of new methods of diagnostic procedure, the curve of new drugs and new operations, are all details that sometimes demand to be thrown into definite relief in the titles of medical papers. In introducing a new drug or anesthetic, it is of moment to make the title emphasize untoward effects, if such there be, as stoppage of the heart or respiration or death, and certainly no new drug ought to be exploited in a medical paper on the basis of only two or three cases in the physician's experience. In reporting fatal cases, an important item to be sometimes featured is the nature of the complicating circumstances, the mixed infection, if any, and more especially, the so-called "terminal infection." "It may seem paradoxical," says Osler, "but there is truth in the statement that persons rarely die of the disease with which they suffer. Secondary infections, or as we are apt to call them in hospital work, terminal infections, carry off many of the incurable cases in the wards." It is evident that many private cases are imperfectly reported in this respect. In reporting fatalities in private practice, there is delicate matter for the casuist. For reasons sufficiently obvious or various, many physicians do not report their fatal cases in medical journals, nor is it strictly incumbent upon them to do so. Furthermore, a particular treatment may be rushed into print as "successful" and the patient die shortly after the case has been published. The grim irony of such cases as these was well emphasized by Dr. Billings in speaking of the early days of trephining for epilepsy. (1861.). If the operation "does not prove immediately fatal," he said, "and the surgeon reports the case early, say, within the first month, it will, in very many cases, come into the lists of cases cured by surgical treatment."*

Leaving simple case-reporting, we come to titles of a more general nature, titles of books, monographs, etudes, protocols of laboratory data, expert opinions in medical jurisprudence, controversies, discussions, facetiæ and the like. Here no general rule can be laid down beyond the simple one mentioned at the outset, that in his titles a writer should dramatize his subject-matter, not in the vulgar show bill or sensational yellow journal sense, but in the sense of emphasizing the central idea, the salient features of his work. A statue, said Victor Hugo, is a nudge to ignorance, and as the avowed intention of all scientific procedure is a labor-saving one—to economize effort and prevent the dissipation of energy—we have a right to expect that a title shall be a guide-post to something we are not looking for as well as something we want to know. The success of such a title depends, in the last analysis, upon the words of which it is composed, that is, it is mainly a question of medical terminology. A science is said to consist of a number of ascertained facts, the ideas which represent or interpret these facts and the words or symbols

*Cincinnati Lancet and Observer, 1861, IV. 341.

which stand for these ideas. In choosing words, the first rule to be observed is that we should avoid as far as possible any terms which do not represent some definite, tangible thing to the mind. Whenever many different remedies are proposed for a disease, it usually means that we do not know how to treat the disease; similarly, when we see a cloud of new terms introduced to represent some indefinite idea or thing, we may be sure that its real nature is not clearly understood. Words are only labels for things at best and if we invent some new term for an obscure conception we are only concealing our ignorance from ourselves, if not from others, by pasting on new labels, which may be the wrong ones. Talleyrand said that words were made to conceal our thoughts, but if science employs words to conceal its ignorance, it lays itself open to the sneer of Mephistopheles.

"Denn eben wo Begriffe fehlen
Da stellt ein Wort zur rechten Zeit sich ein."

Professor Allbutt, in referring to this "inveterate disease of mistaking words for things" thus describes the relation of the man of science to the material universe: "The watcher, while the stream whirls past, endeavors to throw labels upon its indefinite and fleeting parts; some of the labels stick rightly, others stick in wrong places; others again float along space, as if attached to something, but signify nothing." In endeavoring to make our words convey our real meaning, a good criterion of reality is the distinction made in formal logic between what a word or symbol denotes, i. e., what it stands for, and what it connotes—the secondary ideas or implications which it carries to the mind. For example, the Argyll-Robertson pupil denotes a certain condition in the eye, but it may connote tabes or general paralysis. To German bacteriologists the expressions TC, TGL, TO, TOA, TV, TX, TR denote different and definite varieties of tuberculins, but they mean nothing in particular to English-speaking people. Probably no scientific term has caused so much discussion as the single word "entropy." To physicists it denotes a definite mathematical relation. Exactly what it connotes no one has yet been able to define. To our individual minds, what a word denotes is commonly the illusion, what it connotes the reality, and most controversies turn upon the simple fact that identical words mean different things to different people. "Your facts are theoretical moonshine, my facts are real things that have happened in my own experience." A specialist, therefore, who has studied well into his subject, should be cautioned against taking his readers too much for granted. It is true that technical terms, like the formulæ of mathematics, or chemistry, presuppose the "properly constituted mind" in the reader, but in the case of medical literature, not all minds have been prepared in advance, at least not to the extent which some titles would apparently assume or imply.

A second good rule in the choice of words is contained in the by-word of Julius Caesar, which is observed by all men of the world; to avoid an obscure or unusual expression as a navigator would a rock—*Insolens verbum, tanquam scopulum, evitare.* Coleridge said that "unfamiliar names are non-conductors and stop all interest," and the truth of his aphorism can be tested in our own experience by our sensations when asked the familiar question "Do you know so-and-so?" If it happens to be some one we have never heard of, it would be idle to say that we experience any special interest or emotion at the mention of his name. There are two classes of medical terms which are often much abused and misused in this respect; namely, terms derived from the Greek and the eponymic expressions, derived from names of persons. By common consent, the Latin names, where possible, are the best for international nomenclature, as the vernacular are more suitable for uses nearer home. The objection to coining new-fangled expressions from the Greek are, first, that they are by no means easily understood, even by learned Thebans; and, second, they are so frequently devised by incompetent hands. Expressions like ageusia, akathisia, allocheiria, ateleiosis, atremia are the sort of thing that make the weary reader squirm in his chair and reach apprehensively for his medical dictionary, muttering all the while the prayer of the poet to be "anywhere out of the world." Dr. Achilles Rose has done signal service to recent medicine by preaching in season and out of season against the use of barbarisms from faulty Greek etymologies, especially such misbegotten hybrids, half-Latin, half-Greek, as appendicitis, auto-digestion, electrocution, radio-therapy, etc.; but it is to be feared that he is as one preaching to

the desert, for not only does it happen that the skilled clinician, the accomplished surgeon, has often "small Latin and less Greek," but, what is most significant, he concerns himself little about it. Let a word, never so badly put together, once become popular through common usage and it is likely to stick and to thrive. To take a case in point, the term "appendicitis," in strict etymology, denotes nothing. It is an unscholarly hybrid expression of obscure and even illegitimate origin. But it is a far better term than perityphlitis, or any of the other equivalents proposed, because, to the American surgeon at least, it connotes the exact pathological condition which Fitz described and McBurney showed how to diagnose. It is therefore a real word, standing for a real thing, and has won its way to general acceptance. Another etymology which is most unfortunate is the term "anaphylaxis," for increased susceptibility to the toxic effects of normal blood serum. In its literal derivation, anaphylaxis means the same thing as prophylaxis—increased protective power against something—although it is supposed to imply its logical opposite. It is therefore wholly inaccurate, if hyper-susceptibility to toxic effects of blood serum is to be understood as something different from diminished immunity to toxins. Still the word anaphylaxis seems to be gaining ground daily and is probably here to stay. Gould is right, then, in insisting that it is sheer pedantry or literary snobbery to reject a good word on account of its origin, for what it connotes to each and every one of us is the real thing. In the matter of words still uncoined, still unborn, the contention of Dr. Rose seems fair, and it were well if every newly proposed etymology from the Greek could be first submitted to some Amphictyonic Council of medical scholars, who might pass upon its derivation and accuracy before it is thrown into general circulation.

In approaching the vexed question of medical eponyms, we are reminded of the dry remark of Thoreau at the beginning of his Canadian itinerary: "I will not stop to tell the names of my fellow travellers; there were said to be fifteen hundred of them." The number of medical terms derived from names of persons is constantly on the increase and this is the principal objection to their continued use in most cases. Doctors Barton and Wells, of Washington, who are completing a dictionary of medical eponyms, which will prove invaluable to the student and the medical editor, tell me that their collection numbers upwards of fifteen thousand such expressions. This holds out an appalling prospect for the future, when we consider how much valuable time has to be wasted in memorizing useless terms. Much has been written against the use of eponyms in general and the following may be suggested in brief. In the class-room and the clinic, it is very fitting and proper that eponymic terms should be employed, for among students expressions like Stokes-Adams syndrome, Skoda's resonance, Hutchinson's teeth, are likely to awaken and stimulate a lively interest in the history of medicine. In medical literature the use of eponyms should be restricted to those which have become common and well-known, and, where a new or unusual eponym must be employed in a title, it ought to be followed by the bracketed synonym, for the reader's convenience. As a rule, the best eponymic adjectives are those which describe some definite condition or thing, as Colles' fracture, Syme's amputation, Charcot's crystals. Applied to diseases in general, they lead to great confusion. Thus four different diseases are described by the name of Percival Pott, and exophthalmic goitre has four eponymic names in as many different countries. In the case of the pathogenic bacteria and protozoa, the use of eponyms is still more confusing. Dr. George M. Gould has given quite an extensive list of well-known bacteria, each of which is eponymically ascribed to more than one person or discoverer.*

To avoid this kind of thing, botanists and zoologists have adopted a definite rule which physicians should follow, the so-called "law of priority," in virtue of which a generic or specific name in natural history is attributed to the man who first bestowed it and not to the man who first described the organism in question. As Stiles points out, we credit Theobald Smith with the discovery of the parasite of Texas fever, but we do not give him credit for its name (Piroplasma hominis) because he did not name the parasite correctly in the first instance. If zoologists did not locate responsibility in this definite way, the original dis-

*American Medicine, Phila., 1903, N. 242.

coverers of different organisms would be wrongly credited with scores of different names used by other writers. As considerations of time and place forbid me from going into the complicated subject of zoological names, I would strongly recommend to all interested in this matter the important monograph of Dr. Charles W. Stiles on "The International Code of Zoological Nomenclature," which gives a full account of the rules and conventions adopted in naming animal organisms.

There has been of late years a praiseworthy and increasing effort to improve and systematize the nomenclature of the different branches of medical science. As a good example, let me instance the B. N. A. nomenclature of anatomy adopted by the Anatomical Society at Basle in 1895, the results of which have been admirably set forth in Dr. Lewellyn F. Barker's "Anatomical Terminology" (1907). It will be a long time before such reforms as these are taken up by the profession in general, and it is obviously a field in which medical editors and teachers ought, first of all, to be pioneers and leaders. In such an individual matter as the choice of words human nature is apt to follow its own bent at all times and places. When Buffon said *Le style, c'est l'homme,* he meant that each person is a law unto himself in these matters. The effect of this tendency upon medical title is sometimes confusing, as illustrated by the remark of a learned librarian that "the whole world seems to be in conspiracy against bibliographers." Setting aside altruistic motives, some appeal to the self-regarding feelings of the medical author might be made through the simple fact that as a diffuse long-winded book is seldom read, so there is little to stimulate interest in an abscure, ambiguous or wordy title. The whole has been well summed up in an aphorism of Virchow which asserts that brevity in writing is the best insurance for its perusal: *Kürze ist die stärkste Bürgschaft dafür gelesen zu werden.*

Correspondence.

Importance of Local Medical Societies.

Mr. Editor—In the great fight that is being ing carried on by the physicians of this State against disease, quackery, ignorance, etc., much of their strength and power is being wasted, and many of their efforts appear fruitless. The prime factor in this, and the one I want especially to call to their attention through your Journal, is the neglect of their local or home Society. The apparent indifference of some of our leading, prominent physicians to their little County, City or District Medical Society, and their active interest in the State organization is, to me, incomprehensible. The majority of the doctors in our State cannot make it convenient to attend, with any degree of regularity, the sessions of the State Society, which, at the best, are only once a year. Consequently, the great advantage of belonging to and participating in an active medical society that is elevating medical ideas, enlightening the public, and doing real medical society work, comes to only a few practitioners in Virginia—unless they are fortunate enough to be members of active county or local societies. Here is the chance for those men who, if they are really interested in medical society work, to do the work of medical missionaries.

While the State Society is necessary, its greatest value depends on the fact that in it can be centered the power and influences of the County Society; and that through it the County Society can be created, supported, encouraged and made most useful to its members, both for educational and general purposes.

Without material sacrifice of time and money in reaching the place of meeting, the County Society furnishes to every physician the opportunity of membership, with the professional, social and material stimulus belonging thereto. Such a society produces harmony, promotes good fellowship, removes petty jealousies, has an elevating influence on its members, and aids them in educational and scientific advancement. This is the only medium by which the individual practitioner can be reached, and the opportunity given him to register his views regarding the measures and questions which affect him. Here and here alone can we reach and influence legislators. The improvement in medical laws, and the eradication of quackery which prevails, both in and out of our profession, can never be thoroughly accomplished without the aid of the county or local medical societies.

I appeal to those men in Virginia who are

prominent in medical society work—and by this I mean State—if they really wish to elevate medical standards, and desire the medical profession to take the place that, by its rights, it should occupy, never miss attending sessions of their local medical society; and, if the reader of this letter does not belong to any, I would urge him to join his local medical society at once. Then. let all put their shoulders to the wheel and aid those earnest parties who are working, not for glory, but for the general good of their profession.

Many feel that they have a hopeless task in trying to keep alive the little spark of interest which they so earnestly wish might develop into the steady burning flame of an active county medical society. It was with the thought of these men in mind, and especially their Secretaries, that I have written this letter. Upon the shoulders of the Secretary of such an organization rests most of the responsibility for success or failure. He is the engineer and the fireman of the machine; and if he fail to supply the fuel in the shape of energy, or if he is negligent in attention to the details of the operation, the machine will not be in a condition to do its work, and will soon become broken down and dilapidated.

But though the Secretary be a good man—even an ideal one—and gives the most careful attention to details, his Society may still be a failure, and especially so, if he is continuously antagonized by a program committee, or something of that sort, that is destructive in its tendencies rather than constructive. Such parties oftentimes are willing to pick flaws in every suggestion intended for the benefit of the Society, but never have helpful hints to take their place.

The road of the good Secretary is often a hard one to travel. His work means sacrifice of time which he had planned to give to something else. His duties compel him to be a constant student of local conditions. Often they may call for a casting aside of personal preferences. His efforts may or may not be widely appreciated—although he may have the consciousness of knowing that the path he has chosen is the correct one. His interest in the fellow members of his society is an unselfish one, and his fight for higher ideals is a noble one. Hence, if his duty is done, he should not worry about results. The right kind of a man will do his duty as he sees it, and leave results to take care of themselves.

My letter has been much longer than I intended it should be; so I will close with a suggestion to the man in the field of State medical society work.

It is that your Journal give one or two pages of each issue to the county society secretaries, and let it be edited by the men in the field. Let this space be given them as "a clearing house" of ideas, open to any and all—to the man who has originated an appeal for membership or collections; has worked out a good program; is in doubt, and has a question to ask, or has a suggestion to make on any branch of medical society work. Let that space be a suggestion box, and let every doctor be asked to contribute to it.

Our State Medical Society Secretary writes me that many of our local societies exist practically only in name. Hence, I feel that this suggestion may do some good in stimulating interest in this most important part of local medical society work.

V. V. Anderson, M. D.

Lynchburg, Va., June, 1909.

Book Notices.

Studies on Thyroid—the Relation of Iodine to the Physiological Activity of Thyroid Preparations. By REID HUNT and ATHERTON SEIDELL, Hygienic Laboratory of U. S. Public Health and Marine Hospital Service. Bulletin 47. Washington. Government Printing Office. 1909. 8vo. 115 pages. Paper. Issued by the Treasury Department.

This *Bulletin* reviews the history of the action of iodine in thyroidism or exophthalmic goitre. It is quite well proven that iodine is a constituent part of the thyroid; so that in the thyroid feeding treatment of goitre, we are also using iodine medicinally. Iodoform given with thyroid seems to increase its activity. Experiments were made mostly on animals, so that for human therapeutics the conclusions are rather suggestive than proven. Like all of these Government publications, there is so much of tabular report, that the conclusions are covered in a sort of ambiguity.

Appendicitis, and Other Diseases of the Vermiform Appendix. By HOWARD A. KELLY, M. D. With 215 original illustrations, some in colors, and 3 lithographic plates. Philadelphia and London. J.

B. Lippincott Co. 1909. Large 8vo. 502 pages. Cloth.

This is in reality a second edition of the work the author and Dr. Hurdon issued in 1905. Advantage has been taken of the opportunity to dwell with special care on the practical side of the subject in order the better to meet the daily needs of the great army of general surgeons. Appendicitis is accepted solely as a surgical disease—its medical treatment receiving scarcely a mention. Operative measures are described in full detail, so that the surgeon who masters the teachings of this book and who is equipped for abdominal work, in the absence of an expert, should not hesitate to act in an emergency. While full attention is given to anatomy and physiology of the appendix, as also to bacteriology, pathology, etiology of appendicitis, its clinical history, etc., an important chapter is on differential diagnosis. Early operation, it is claimed, is an essential of good results. It is a standard, up-to-date book, and useful to all practitioners—especially to surgeons, of course.

Clinical Diagnosis and Treatment of Disorders of the Bladder, With Technique of Cystoscopy. By FOLLEN CABOT, M. D., Professor of Genito-Urinary Diseases, Post-Graduate Medical School, New York, etc. Illustrated. New York. E. B. Treat & Co. 1909. Small 8vo. 225 pages. Cloth, $2.

This is a good, practical book for both physician and surgeon. After chapters on Anatomy and Urinalysis, methods of examining the bladder are taken up, technique of electrical cystoscopy given, with indications and contra-indications for its use. Various forms of cystitis are described, and the treatment best adapted to each is detailed. Recent improvements in the cystoscope, and the greatly reduced cost of the instrument have brought it within the reach of all practitioners. All other useful methods beside cystoscopy are given as helps to diagnosis. This book is a great help to the practical bladder surgeon in deciding him as to the operation to be done when an operation is needed. While the table of contents could be more conveniently arranged to assist in ready reference, the excellent Index fills the deficiencies. The illustrations are all good and serviceable.

Editorial.

County Medical Societies.

We invite attention to the correspondence in this issue by Dr. V. V. Anderson, concerning the value of county medical societies, including in this category the city medical societies.

There are in Virginia an even one hundred counties, and yet, scarcely more than forty local societies. A number of these are practically district or semi-district organizations—including the doctors of several contiguous counties in their membership. Some of these societies are doing magnificent work, and their influences are felt far and wide. Papers read before them are of a high order of merit and are eagerly sought by the medical press of the country. A knowledge of such facts stimulates members to the preparation of valuable papers, on which much study is given in preparation. Authors would scarcely dare to offer contributions before such societies unless they felt that they were bringing to the front the results of original study as the result of their obervations and experiences, or else verifying or disproving the bold assertions or assumptions of some ditinguished leader in the profesion. Hence the sessions of such societies are usually well attended, for the attendant feels in advance that some valuable suggestion is to be brought out.

An important feature of such papers is generally that the author selects some one or two points only of a disease that strike him as worthy of special attention, leaving the detailed description of the disease to the text-books, which every doctor is presumed to consult as occasion requires; and thus, in a ten or fifteen minutes' paper, impress a practical lesson—whether it be in the line of pathology or diagnosis, or treatment, etc. Unique or specially instructive cases are brought to the attention of the societies, but not reported in a loose, haphazard manner. Rarely, for instance does one attend the Richmond Academy of Medicine and Surgery without returning to his office feeling rewarded for his going. The officers of this Academy for years past, as a rule, have been wide awake men, who talk to their friends in advance as to subjects to be considered at the next meeting, and thus keep up professional interest in what is transpiring.

Not only is such an organization useful from a scientific advancement standpoint, but matters of routine professional interest are frequently considered. Thus, the doctors of Richmond this year are well aroused to the importance of repeal of the State license tax on doctors, and their influences will be duly exerted on prospective legislators from this city. With reference to public health measures, they cheerfully are giving, more and more, of their help to sustaining both the local and State Boards of Health, and thus are constantly striving to make the city a healthful one for its residents and visitors.

We do not wish to appear invidious in mentioning the Southwestern Virginia Medical Society, the South Piedmont Medical Society, the Roanoke Academy of Medicine, the Augusta County Medical Society, the Doctors' Club of University of Virginia, etc., as doing good scientific work, but we rarely hear of the Norfolk Medical Society in a community representing over one hundred and twenty-five doctors; of the Danville Academy of Medicine, of the Rockingham County Medical Association, of the Shenandoah County Medical Society, etc., in each of which communities there are doctors enough of marked ability to make their monthly or quarterly sessions ot great value to the profession at large. These and other local societies need "revival meetings," and it would be easy to have them if the doctors of these several communities would put their minds and energies to work in this direction.

As to the suggestion of our correspondent, that this Journal should set aside a page or two for local professional notes relating to the doings of the several local societies, the editor has always been anxious to do so. But if he only knew how difficult it is to keep a correct list of the local societies of this Stae, their officers, dates of meeting, personal news items, etc., he would better understand the situation. Doctors, as a rule, for some unaccountable reason, are poor correspondents—not even responding to personal letters of special professional interest. It is a fact that we have time and again noticed that the more prominent the doctor and the more busy he generally is, the more apt are we to get prompt and satisfactory responses to professional personal letters.

Suits Against American Medical Association.

According to a clipping from one of the Chicago newspapers, "separate suits for $100,000 damages each have been brought in the United States Circuit Court in Chicago, by Dr. S. Lewis Summers and the Organic Chemical Manufacturing Company, both of this city (Chicago), against the American Medical Association, for alleged misrepresentations about the products of the plaintiff Company in the publication of the Association." The suit, it is declared, "will expose a systematic attempt to give a monopoly to certain German chemical manufacturers, shutting out American producers. One of the features expected to be brought out is how patients are compelled to pay tribute to certain German manufacturers of standard drugs and remedies. If prescribed by physicians under their trade-mark names, which are easily remembered, the cost is three or four times as great as when prescribed under the technical names. As the latter are complicated and hard to remember, few physicians use them, preferring the simpler ones.

"The position of Dr. Summers is stoutly supported by such experts as Professor Samuel P. Sadler, of the College of Pharmacy (who was a member of the Council on Pharmacy and Chemistry of the American Medical Association for three years), and Dr. Henry Beates, Jr., President of the Pennsylvania State Medical Examining Board, who both vigorously oppose the findings of the Council on Pharmacy and Chemistry on the subject."

While we profess to know nothing of the true merits of the case, and cannot commit ourselves to an opinion, it may yet be remarked that in view of certain reckless or hasty judgments by this Council on Pharmacy and Chemistry, we are not surprised that suits have been instituted. We presume, however, that the Association is fully able, financially, to meet the losses, if the suits should be awarded in favor of the plaintiffs, but it should teach a lesson to the Council, which thus implicates the whole Association, to be more careful in its future publications.

The Medical Society of North Carolina

Met at Asheville, N. C., June 15-17, The program of papers read was by far the longest

ever attempted, and was divided into numerous sections to expedite matters.

The newly elected officers were: President, Dr. J. A. Burroughs, of Asheville; Vice-Presidents, Drs. E. J. Wood, of Wilmington; J. Q. Myers, of North Wilkesboro; L. D. Wharton, of Smithfield; Secretary, Dr. D. A. Stanton, of High Point, re-elected; Orator, Dr. Cyrus Thompson, of Jacksonville; Essayist, Dr. R. V. Walker, of Salisbury; Leader of Debate, Dr. D. A. Garrison, of Gastonia; Treasurer, Dr. H. D. Walker, of Elizabeth City; Delegate Medical Association, T. E. W. Brown, of Asheville; Delegate to Virginia Association, Dr. M. Bolton, of Rich Square; Dr. F. R. Harris, of Henderson; Dr. R. E. Lee, of Goldsboro; Dr. S. M. Mann, of Moyock, and Dr. R. O. Dees, of Greensboro.

Wrightsville Beach was chosen as the next place of meeting.

Dr. George G. Thomas, of Wilmington, was elected Chairman of the Committee on Arrangements for the next Convention.

Richmond City Bacteriologist.

Dr. Karl S. Blackwell, who has for the past two years held the position of City Bacteriologist to the Richmond Health Department, resigned on June 15th. Mr. Aubrey H. Straus was elected by the Board of Health as his successor. Mr. Straus was graduated from Richmond College in 1907 with the degree of Bachelor of Science. For the past two years he has taken special work in sanitary science and bacteriology at the Massachusetts Institute of Technology and has worked regularly in the laboratory of the Boston Board of Health. It is the purpose of the Richmond Health Department to enlarge considerably the work of the bacteriologist laboratory so as to make it of increased usefulness to the medical profession of the city.

Professorships at University of Virginia.

The following announcements of changes in the Medical Department of the University of Virginia were made during the recent Commencement exercises, such promotions to become effective next session:

Dr. J. C. Flippin, from Adjunct Professor of Clinical Medicine, to Associate Professor of Clinical Medicine.

Dr. Harvey E. Jordan, from Adjunct Professor of Anatomy, to Associate Professor of Anatomy.

The American Medical Editors' Association

Met at Atlantic City, N. J., June 5th and 7th for its fortieth annual session. More than a score of papers covering the field of medical journalism were read, the contributors coming from various sections of America, and one from England. The annual banquet was the social event of the occasion, and was held at the Marlborough-Blenheim, on the night of June 7th.

The Medical Era's Gastro-Intestinal Editions.

During July and August, *The Medical Era*, of St. Louis, Missouri, will issue its annual series of issues devoted to gastro-intestinal diseases. The July number will take up the usual bowel disorders of hot weather, and the August number will be devoted entirely to typhoid fever. The editor will forward copies to physicians applying for same.

The Lynchburg Medical Society

Is considering a plan for post-graduate work, and a Committee is on the lookout for suitable rooms—one of which the Society intends to use as a Medical Library. A large number of doctors attended a "smoker" at the residence of Dr. George J. Tompkins, when the suggestion was considered.

The Medical Examining Board of Virginia

Is holding its first semi-annual session for 1909 in this city during this week. Necessarily, it will be some weeks before all the papers can be examined, markings made, and reports returned to the Secretary, Dr. R. S. Martin, of Stuart, Virginia, for tabulation, etc.

St. Andrew's Hospital, Lynchburg, Va.,

Has been completed and Drs. Terrell and Lile are in charge. It is proposed in the near future to organize a stock company of physicians and surgeons for its control.

The City of Lynchburg

Has issued bonds to build a modern, up-to-date City Hospital.

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Original Communications.

TREATMENT OF CONSUMPTION.*

By W. H. COFFMAN, M. D., Richmond, Va.

In the treatment of consumption there are two objects the accomplishment of which are desirable, and, granting that the case is seen before it is in too advanced a stage both objects should be obtainable. The first is to relieve the patient of his symptoms and arrest the progress of the disease; the second is to cure him of his tuberculosis. The first is to be accomplished by the general management of the case, by attention to daily habits, diet and exhibition of drugs as may be necessary; the second by the use of culture products.

General Management. The question is often asked, is it best to tell the tuberculous patient that he has tuberculosis? I think it is essential for him to know it because there are very many cases in which, in order to effect a cure, the patient may be compelled to make many sacrifices, either financially or the giving up of life-long habits. In order that he may be willing to make this sacrifice, he must fully realize the gravity of his situation. Of course, tact must be used in bringing this knowledge to him so as to, as much as possible, reduce the mental shock. I have not seen any patient who was made worse on being told he had tuberculosis.

Given an obedient patient, in moderate or good circumstances, who has gouten over the first fright of the knowledge of his condition, I think it probable that he can be treated to better advantage in his own comfortable home than almost anywhere else, believing, as I do, that climate is almost a negligible factor in the case of a patient who will do as he is told.

He should have a room, preferably a large one, with several windows through which the sun may shine at least several hours a day or better, he should sleep on the porch or veranda, or in a shack on the grounds of his home. His waking hours should be spent in the open air, indulging in moderate exercise; or when this is not advisable because of high temperature or rapid pulse, he should be on the veranda or in the yard on a reclining chair or cot. If he spends the night in his room, the windows, of course, must be kept wide open.

While, as I said before, the majority of consumptives are as well, or better off, in their own homes than elsewhere, there are a few individuals who either will not or can not follow directions at home. These, of course, it is best to send to a resort for consumptives where they will have example as well as precept, and will be away from the influences which at home prevented them from following out the treatment as it should have been.

Diet.—As to diet, I, personally, believe that it should be "mixed," that is, of such food as comes on the table of the ordinarily well-to-do, rather than a preponderance of any one variety of food, such as milk and eggs. At the same time, I think the patient should use milk to wash down his food instead of water and coffee, because the milk, of course, has a large caloric value, while water or coffee have practically none. Raw eggs should, I think, be kept as a reserve. For instance, if by reason of lack of appetite the patient has not been able to chew and swallow what he knows to be a sufficient meal, he may then take two or three eggs to finish out because they readily slip down without being chewed.

In those cases which are complicated by tuberculous laryngitis of such degree that deglutition is painful, the pain may be greatly relieved by spraying the throat before meals with a solution of heroin hydrochlorate, three grains to the ounce of water. The local anesthesic is

*Read before the Richmond Academy of Medicine and Surgery, June 8, 1909.

not so great as that from cocaine but it is sufficient to last several hours.

Because of the fact that people who are overfed usually have sluggish bowel movement, it is well to have occasional doses of castor oil or senna to empty the colon. In those who are habitually constipated, the proper remedies must be used. In case of low stomach motility, it may be necessary to use lavage or massage once a day in order to remove material left over from the day before. In case there is diarrhea it must, of course, be controlled. This can usually be accomplished by the regulation of diet and the occasional use of high enemata.

Fever and Chills.—As the high temperature in consumption is due to the absorption of toxic materials from the local lesion, and as exercise increases the amount of this absorption, it is, of course, plain that in fevering cases the exercise should be limited, and, if necessary, the patient put to bed and kept there until the fever lessens.

Also, as it is a daily observation that high temperature in consumptives is preceded by chills, it is necessary to reduce or eliminate these chills. This chill or chilly sensation appears in the majority of patients at a fairly definite time of day. This time should be noted; when found, the patient should be put to bed and covered up to the neck, with one or more hot-water bags at his feet. This should be done about an hour before the expected arrival of the chill and the patient kept so until about an hour after the chill should have passed. In case the fever is not lessened by the rest in bed and the relief of the chilly sensation, recourse must be had to cold or tepid baths and antipyretics. The least harmful of this latter is probably pyramidon. This may be given just before or about the time that the fever usually rises, in doses of two or three grain capsules repeated once or twice if necessary.

Night Sweats.—As in the vast majority of cases that have night sweats they are preceded by fever, it is evident that in order to cure them the fever must be relieved. This can usually be done by the measures outlined above. As a temporary remedy, camphoric acid is probably the best because the least harmful—40 to 50 rgains to be given in 5 or 10 grain capsules between six and nine in the evening. This usually relieves the sweats and besides, is a good general tonic, its tonic effect lasting in most cases as long as twenty-four hours.

If the sweat has been severe, the patient should change his wet for dry night clothes, first having been well rubbed, preferably by some one other than himself.

Pulse.—In those patients in whom the pulse rate is ordinarily all right, but in whom exercise sends it abnormally high, the exercise should be so limited as not to produce this phenomenon, In those cases in which the pulse rate is continuously too rapid, the patient must be put absolutely to bed to remain until he is well back toward normal.

Too much stress cannot be laid upon the necessity for keeping close watch on the pulse rate, as when the heart is once over-strained the patient has lost the best friend he may have in his fight.

Cough.—Cough is, in many cases, the distressing feature of the disease; but, fortunately, at least partial relief is usually attainable. The patient should be instructed to use his will power to repress the cough, not to give way to his desire, but hold it back as much as possible. The amount of relief that may be experienced by this simple procedure is sometimes wonderful, especially in very nervous patients who are so apt to have a hacking, unproductive cough.

Sometimes excessive cnughing is due to disease of the throat, nose or ear; and when such diseaoe is found and relieved the cough disappears.

The ordinary cough of consumptives may be relieved by drugs, and of these heroin is probably the best because of its slight systemic effect and consequent slight danger of "habit." One-twelfth to one-sixteenth grain, two or three times a day, is usually sufficient. Some of the cases that do not yield to heroin may be benefitted by the use of codein in one-half or one grain doses; but there are few cases which do not yield to any of the mild remedies. Those it may be necessary to put to bed and give morphine hypodermically.

Sputum.—It should be seen to that patients destroy their sputum. It is sometimes hard, however, to make them do so, but if it is impressed upon them that a careless disposal of sputum may cause them to have a reinfection themselves, they uually become models of care.

A patient who is in bed should have a paper spit-cup in a metal frame, the paper part to be frequently renewed and the old ones burned. He should also have paper napkins at hand, into which he may cough and with which he may wipe his mouth, to be at once put into a paper bag kept for that purpose, the paper bag to be burnt without removal of the handkerchiefs.

Patients who are going about should carry collapsible paper sputum cups into which they may expectorate. These patients when at home may use cuspidors in which there is a little water, and these are to be cleaned daily with boiling water. They should also keep in one pocket a supply of paper napkins and in another a paper bag into which the napkins can be placed after use and later burned without being handled a second time. Female patients, when out of doors, may carry their sputum cups, napkins and paper bags in their hand-bags.

The necessity which the consumptive is under for holding something in front of his mouth when he coughs is very obvious when we remember that the danger from the consumptive is not in the unsightly gobs of sputum, which an ordinarily clean person will take care of anyway, but in the fine spray which flies from the mouth when coughing, which carries tubercle bacilli as well as does the sputum, and which, unless something is held in front of the mouth, is deposited on the clothing, carpets, furniture and bedding, there to be the source of infection for others.

Hemorrhage.—A patient who is bleeding freely should be put in bed as soon as possible, and should be propped straight up, comfortable, with a bowl or other large receptacle containing a little water, in his lap, so that when the gushes of blood come he may be able to dispose of them with the least possible exertion. He should be kept in bed for at least ten days after the bleeding is over, because it takes about this length of time for the organization of the clot, which is nature's means of stopping the bleeding. He should have a small hypodermic of morphia to control the cough and the nervousness from which so many bleeding patients suffer.

Of drugs, nitrite of amyl is probably the only one that has any immediate effect on pulmonary hemorrhage. Calcium chloride is said to be useful in controlling the tendency to bleed. It may be given in five grain doses every three hours, until five or six doses have been given; then, three times daily for about three days.

Many cases may be controlled by lowering the blood pressure. This may be done by giving large doses of epsom salt; also, by the use of such remedies as veratrum viride.

In view of the fact that any patient with an open cavity is liable to bleed, it is well to have an occasional record of his blood pressure, so that when he does bleed you will be in a position to know when you have reduced the blood pressure enough. Fifteen to twenty points are usually sufficient. There are, however, a few cases in which veratrum viride does no good, that are promptly checked by the use of adrenalin. It is probably well to restrict for one or two days after a hemorrhage the amount of the patient's rational food, or, at least, the fluids.

Pleurisy.—Pleurisy may usually be controlled by putting the patient to bed and applying heat. Sometimes it may be necessary to limit the excursions of the lung by applications of adhesive strips. These should be placed over the lower part of the lung ot the side affected, extending from the lower part of the sternum to the backbone. There are occasional cases in which it it necessary to use a hypodermic of morphia.

Culture Products.—A remedy, which we can reasonably hope will be of benefit in the treatment of a given disease, should, we will all agree, be given a full and fair trial. In consumption, culture products make such a remedy The fact that it does increase natural resistance to tuberculosis and at least gives a partial immunity against it, seems to me so well established that a multiplication of references is unnecessary.

In this country most of the private sanitariums have been using it for years, and claim that their results are many times better than before they commenced its use, notably the Winyah Sanitarium, at Asheville, North Carolina, and the Pottenger Sanitarium, at Los Angeles. Many of the State and city institutions also, such as the Henry Phipps Institute and its branches and the Saranac Lake Sanitarium make use of it.

In the August, 1906, number of the *Jour-*

nal of the American Medical Sciences, Dr. Trudeau states that he has used culture products continuously since 1891. His tabulated results show that in from three to thirteen years after discharge twenty-five per cent. more of his tuberculin-treated cases were alive and well than those treated during the same period with tuberculin.

In England many favorable reports have been published, notably those of Wright, with which you are all familiar.

In Germany, out of nearly one hundred institutes for the treatment of tuberculosis, I am told that there are only two which do not use culture products.

When we remember that these institutes are practically kept by patients sent to them by the industrial insurance companies, we must think that the remedy is useful, because these insurance companies have found out that by having their tuberculous risks treated with culture products they have been saving many dollars.

Those who wish to make a trial of culture products must not be deterred from so doing because many of the leading men in tuberculosis work are not using it, for there are some reputable physicians who do not believe in rabies, some others who are not yet fully convinced that vaccination is useful as a preventive of smallpox, and many of us were very slow in taking up the use of diphtheria antitoxin.

PARANOIA.*

By J. T. GRAHAM, M. D., Wytheville, Va.

Paranoia (from para, beside; noös, mind) is a mental disease characterized by systematized delusions. The ego is the center around which these delusions revolve. The disease is progressive, extending throughout life; and while it may present remissions, there is no cure for it. In the progress of this disease, there is a progressive evolution of a permanent system of persecutory and expansive delusions. While there are falsifications of memory and hallucinations at some period, yet there is no clouding of consciousness, incoherence of thought, or mental deterioration except in judgment, which is biased by the delusions.

History. Paranoia was a term used by the best Greek writers to denote insanity, but apparently was first employed by modern writers in 1764, when Vogel applied it as a collective name to nine different forms of mental disease. Its first application in its modern sense is due to Mendel (1881).

Very little is known of its etiology, but hereditary degenerative changes are usually prominent. Berkley says: "I have never seen a paranoiac, in whose case a full and complete history could be obtained, that did not have an hereditary history of drunkenness, family neuroses, or actual insanity." Our knowledge of the pathology is even more unsatisfactory. "No definite anatomical basis, except evidences of degeneration or anomalies in the brain has been demonstrated."

The best way to get a knowledge of the symptoms of paranoia is to study the train of thought in a paranoiac, and, as this has been so thoroughly done by Dr. Keniston, of the Connecticut Hospital for the Insane, I shall make liberal quotations from his paper on paranoia; and then report three cases in my own experience illustrative of the symptoms he so well describes.

Dr. Keniston says, in speaking of the train of thought, "This is well ordered, and educated patients in particular display great acumen in their arguments, appeals for redress, statements, and letters. Their premises may be real or imaginary, but in either case the resultant deductions are perfectly coherent, although a morbid transformation of constantly surging precepts and concepts essentially influences their elaboration." * * * "In other words, the progression of ideas is logical, but the standpoints are displaced, the ethical sense is defective, patients see no incongruity between actual and assumed facts, and their delusions persist though thier empirical supports collapse. 'With all their misconceptions and misconstructions, paranoiacs retain for many years the power of thinking logically and clearly upon subjects other than those with touch their own false impressions.' (Berkley.)

Judgment shows considerable weakness, since it is biased by the delusions, and there is marked inaccessibility to arguments. With the emergence of expansive ideas false premises constantly arise which cannot be criticized or corrected, but are accepted and utilized indiscriminately. Perception is usually keen, but often

*Read before the Fifteenth Semi-Annual Meeting of the Southwest Virginia Medical Society, held at Marion, Va., May 27-28, 1909.

distorted; orientation is always normal, and consciousness clear. Attention is largely directed to matters concerning the ego, and often wanders from matters outside the delusions. Paranoiacs have no genuine insight into their disease, but may present numerous hypochondriacal complaints for which they seek treatment and which they defend with great ingenuity. They display a monstrous over-estimation of self and an exaggerated self-consciousness, as well as a lively feeling of independence.

Memory is good, except for false interpretations of past events which fortify their delusions (retrospective falsification of memory). At times patients are under a vehement emotional stress, but show no independent, emotional disturbances. They know well how to control themselves, and often dissimulate their apprehensions. At first they are despondent, later shy, morose, and irritable, then fearful, and finally angry and vengeful, although a few are resigned or even cheerful. Ultimately, most are apt to become consequential, intolerant, or haughty. Many show a remarkable indifference in describing their criminal acts, whose nature and consequences they fully recognize.

Conduct: This may be so well ordered that for a long time no suspicion of insanity is entertained. The early seclusiveness of paranoiacs, their suspicions, peculiarities of dress and manner, are regarded as only "eccentricities," even when they begin to complain of abuses. This is partly due to their keen reasoning, and partly to their plausible interpretations. A teacher engaged in controversies with scholars, parents, and committees for fifteen years before her disease was recognized. An excellent artisan left place after place in various towns because he could get no redress for his "wrongs." During this time he was imprisoned several times for assaults.

One patient airs his grievances in the press; another frequently appeals to the authorities for protection; others write to dignitaries, politicians, actresses, and so on, before their sanity is questioned. One woman kept a record of several changes of residences for two years prior to her admission to the hospital 'to escape operations performed on her at night.'"
* * *

"With the advent of expansive ideas patients may apply for important offices, propose marriage to exalted personages, write books, promote inventions, etc. They neglect business and family, alienate friends, and become callous to all but their own concerns. Some, however, are capable of varied productive work for years, although their activity is often purely mechanical. Everything centers in the ego. They will not, indeed cannot, take advice; meet all objections with an incredulous, superior air, and their convictions remain unshaken. When finally they succeed in an 'explanation' they become very dangerous to the community, since they are almost sure to attempt a murderous assault. Since legal redress is impossible they take the law into their own hands." * * * Presidents, kings, bankers, scientists, physicians, husbands, wives, children, acquaintances, or a casual passer are numbered among the victims of this dangerous class. Often, indeed, the first revelation of paranoia comes from a homicidal attack."*

MEDICO-LEGAL ASPECTS OF PARANOIA.

The paranoiac is the most dangerous of all classes of the insane because least supected until the overt act is committed. The public have a distorted idea of insanity in general, and of the criminal insane in particular, "Because," says Bancroft, "an insane person manifests only one or two delusions, talks coherently and intelligently, and transacts business correctly, it does not follow that his mind is sound on all other relationships outside the one or two prominent delusions that he may exhibit. Their unfortunate possessor is usually damaged in all the higher mental processes, such as the judgment and the moral perceptions, and, particularly, in the exercise of the will power."

"While apparently sane on all other topics and able to talk connectedly on everyday matters and transact his routine business he may be so dominated by certain prevailing ideas as to be wholly unable to resist certain acts, because in his own disordered mind they are justified by the facts in his individual life. These are the insane people who are most dangerous. It is not the turbulent maniac, full of incoherence and noisy destructiveness, but the quiet secretive paranoiac, who moves around amongst people in his daily avocations, who may spread destruction in his path."

Let me quote from another writer on the same line. (Allison). "As a rule the types of

*Reference Hand-Book of The Medical Sciences.

insanity existing among those who commit criminal acts are characterized by degeneracy, are fixed in their nature, and, usually irremediable. Self-admiration is so strong among offenders of this class that they resent any impugnment of their mental condition, but a verdict of chronic and confirmed insanity would be justified in many instances as a measure calculated to insure confinement for life. Such a course is not only humiliating but is a severe blow to their pride and arrogance, which leads them to crave notoriety as heroes and martyrs. Many so-called anarchists are really unbalanced persons whose crimes fall short of murder, but who, nevertheless, should be branded as insane and degenerate, and who should permanently pass out of sight and mind behind the closed doors of lunatic asylums."

RELIGIOUS PARANOIA.

The first case I shall report was one of religious paranoia, a very dangerous type. A religious paranoiac becomes a source of danger from the fact that he will almost certainly, sooner or later, come to that mental condition in which he conceives it to be his duty to destroy, or sacrifice, any person who opposes him in his views. He must get them out of the way as obstacles to the accomplishment of his great work as a prophet, priest or "Saviour."

This case came under my observation during the years of 1896 and 1897. I shall let him tell his own story. After giving his reasons for his "call" to his prophetic office he says:

"Then, between January 28th and February 2nd, during this fast of over five days in 1896, I saw one morning in open daylight, a man standing in my room, clad in what I supposed was the ancient Jewish garb, with a girdle around his waist and a hat on, of peculiar shape, all of his costume being of a drab or dusty yellow color, and a voice near me, but not that of the man himself, distinctly pronounced the name, "Jeremiah."

I wondered much at what I firmly believe was a true and open vision of the figure of the prophet Jeremiah." * * *

"It is probable that the exact date of this open vision of 'Jeremiah' was February 1, 1896.

Wondering still more what could be the reason of this vision of the ancient and exalted prophet of God, I began to read the book of the Prophet Jeremiah more attentively, praying to God, through Jesus Christ, who is the resurrection and the life, for his assistance in reading and interpreting this scripture. I was first impressed in this reading with Jeremiah's appointment and its nature, as given to him by the Lord, showing more particularly in the fifth and tenth verses of the first chapter * * * the fifth verse says: "before I formed thee in the belly I knew thee, and before thou camest out of the womb I sanctified thee and I ordained thee a prophet unto the nations. Tenth verse says, "See, I have this day set thee over the nations and over the kingdoms to root out, and to pull down, and to destroy and to throw down, to build and to plant. Thus is Jeremiah set over them, and confirmed forever in the resurrection of Christ; unless it can be shown in scripture that, this appointment of Jeremiah which was given by Almighty God, has been taken away from him by Him who gave it. Therefore, it is still in force; however much, naturally, we might suppose that all appointments cease at the natural death of all appointees whatever. For this appointment, like Ezekiel's and that of the other prophets, was spiritual as well as real; * * * Therefore, they have the same validity and strength to-day, that they ever had. To further confirm this view, by reference to the 25th chapter of Jeremiah, it may be seen, there, that Jeremiah is sent to all nations at all times to perform the duties of his exalted office. Therefore the conclusion is inevitable, that, no nation has ever been built up or pulled down without him since his appointment. And this view may also still further be confirmed by an attentive and prayerful reading of the entire book of Jeremiah. Then, if this be true in the case of a nation or nations, why not in the case of an individual or individuals, since there is a separation between the charitable and the uncharitable. Then a truthful relation of the reason why this first fast was brought to a close on the sixth day, prematurely, is as follows: At the fourth or fifth day (which was not the case in the longer fast a year later) the gnawings of disappointed nature so aroused the evil principle that appears to exist in every creature, that I prayed to God in the agony of Satan's ceaseless attacks through the flesh, for Satan's conversion, instead of asking to be relieved from him; and during that night Satan was clearly shown carrying away two mem-

bers of my family, before my face, not molesting me. Had I been the one taken, I would doubtless have not been so astonished at this apparition. And this awful thing, so feared and dreaded, and so totally unexpected, was shown for the purpose of correction and reproof as well as to show the powerful contrast between the truth in Christ and the false in Satan, as this relation will prove. For these two, thus taken in the figure, declined to ask pardon for their offenses against the head of the family; although their sure pardon awaited their so doing. * * * One remarkable thing was that Satan was shown as an entirely sexless being, as if he might have been the premature and unlooked for offspring of some unhallowed monster; and his being sexless is shown to be the reason why he cannot be converted."

His second fast began the evening of January 21st, 1897, as stated, at Wytheville, Va. and would have continued forty days according to the order of the spirit, but that dear spirit brought a scapegoat to break it. The writer was the scapegoat. In explanation of this fast which he was commanded to take he says:

"Last summer, on the night of June 1st, 1896, while staying at the house of Brother ————, in Grayson County, I saw in a most clear and vivid manner, shown by the same spirit, the circumstance prophesied in the 22nd verse of the 31st chapter of Jeremiah, which verse reads as follows: 'How long wilt thou go about thou backsliding daughter? For the Lord hath created a new thing in the earth, a woman shall compass a man.'"

I saw the above circumstance as follows: On the night of June 1st, 1896, as stated, there was shown to me not as a filthy dream but as if shown by one sent from Heaven to show the matter for a particular purpose the following: There was a young woman made to compass a young man twice in succession in my sight. The same night some while after the dream of the woman, I was shown a stream in my native town (Wytheville) running up hill for some distance and compelled to flow off in a direction different from its usual course. This was doubtless to confirm to me that the power of the Spirit of God was superior to all the laws of nature."

"Now refer to the date when this occurrence of 'the backsliding daughter' and her husband were shown to me, namely, June 1st, 1896; and then if the vision showed me either the spiritual or real procreation of these two witnesses, as individuals, and their incubation is neither longer nor shorter than nature's term, they were undoubtedly born on or about the first of March, 1897; and no power earthly could prevent it.

And, as related, since the act of procreation just referred to, was performed twice in succession that part of it was intended to show me that the issue of the act would be twins. And I believe they were born as stated; and will appear in the spirit and power of Jeremiah and Ezekiel."

One more quotation to show the progress of his disease and the expansive nature of his delusions. In addition to dealing in spiritual matters after his second fast from wshich he was born as Jeremiah, he takes a hand in directing the dignataries of the government in the performance of their duties.

"I am not presuming to judge anything before the time, until the Lord come. I am merely conveying the message given to me by Him who hath all power." * * * "Without further circumlocution, here is this matter of such deep and vital interest to so many according to this revelation. This great court recently decided in effect, that in relation to a direct income tax, no section of the people of this country should be taxed unequally or partially by any statute. This decision was commended in this revelation. But the spirit that showed this matter to me, the Spirit of God, said, there were other decisions involving the interests and liberties of all the people and probably of all mankind, not in a direct tax law, which were offensive to Him who is judge over all and has all power, saying: the issue is between Him and them, that is between God and this court; I give you the words exactly.

These decisions, not less than three of them, which appear to have rendered constitutional, statutes that are opposed to the spirit if not the letter of the Constitution, the Almighty, with far more awful power and majesty than all of the courts of the earth combined, designates as 'wrong and iniquitous.' I give you the words exactly. And also the same tribunal, above that of all the earth, said 'Charge them with it and assure them of the forgiveness of God,

if they will rehear the cases and decide them justly, consulting Him only.'

"But it would seem from the following, that God has taken into His own hands the cause of the downtrodden and oppressed millions, as the following figures will show." * * *

"I was myself shown as walking across a field toward a fence, partly down, so much down that one might step over it; in which fence, the only fence I saw, there was still some cover for that noble game bird, the quail often called partridge. Approaching more closely, following my course which led me across the fence, I saw one of these birds, in this fence, a few feet away, having the right wing drooping and broken; the only bird I saw. This bird seemed much distressed and disturbed from some cause other than the broken wing. Before I had time to think, that bird ran down that fence quickly in my direction, in fact, as soon as I came near, and leaving the fence sought refuge in my hand from some foe I had not yet seen. Giving it the loving protection it sought with so much confidence, I moved forward briskly straight on in my course, stepping over the fence, and almost stepped on a skunk, white with golden yellow spots; whose surprise and chagrin at the loss of his coveted quarry were very great. He did not attempt to take the offensive; this skunk, the only skunk that I saw. And I, the only refuge for the bird I saw, moved away straight on my course, on a straight road leading upward; the only road that I saw.

Within the next day or so I had this figure copied and sent to each member of the court, suggesting to them to seek God for its interpretation. And I also sent it without interpreting it, to several newspapers in different parts of the country. But its interpretation is so plain that it scarcely requires an explanation. * * Notwithstanding, for fear many will here not confidently present their petitions, asking an interpretation, through the only portal by which the Almighty can be reached, on their bended knees, permit me to say that I believe 'the fence,' showing as it did, represented the present condition of 'The Constitution.' The court, the natural and lawful interpreters of the Constitution, were no where shown in the figure. The bird, which in its condition represented the distressed and oppressed millions, was left alone to elude its oppressor and destroyer as best it could; and the figure of God's witness, appearing just when he did and rescuing the bird, showed that the bird's last remaining hope was God."

PERSECUTORY PARANOIA.

Case No. 2.—A lady of culture and refinement, highly educated, and talented musician. She was being persecuted by a member of her family, to whom she was once devoted; the persecutor was trying to get rid of her in order to get possession of her property. The method, she claimed, was by poison administered hypodermically. She sees a strange man in town, he is her enemy "made up" or in disguise, to make another attempt on her life. The real man may be hundreds of miles away, yet the next day she comes to my office to show me the point of puncture in her arm where the needle was inserted during the night. She awoke in time to break away before receiving the full dose, thus avoiding a fatal result.

PARANOIA, MIXED WITH MANIC DEPRESSIVE INSANITY.

Case No. 3.—This case became homicidal. The one peculiar characteristic of this case was the cycle of depression and exaltation, yet the ego was the centre of all thought and action throughout both. Close observation is required to detect the paranoiac symptoms in a patient of this class during the periods of depression, but they were there in this case. In his own mind he was exalted in his humility, he was a paragon of humility, he could give Moses points on meekness, took special delight in playing the role of a martyr. In his exalted states he was above the ordinary man in his relation to his fellowmen—he was not amenable to the laws of the State, could rise above all law.

In this class of cases the danger point is the transition state between the periods of depression and exaltation. It is then that the mind is most unstable, and an insult at this time, either fancied or real, is most likely to be resented, even with homicidal intent.

SCARLET FEVER.*

By JAMES DUDLEY MORGAN, M. D.,
Washington, D. C.,
Physician, Garfield Hospital, Chief of Medical Service, Emergency Hospital, Central Dispensary, etc.

The attention given to contagious diseases during three months every year for the past

*Read before the Medical and Surgical Society, Washington, D. C., May 6, 1909.

ten years at the Garfield Memorial Hospital Annex, has brought to the writer's attention a few points in reference to scarlet fever which may be at variance to many opinions and generally accepted dogmas, but the writer can only plead that the facts have been learned from observation and experience.

Etiology.—The particular cause of scarlet fever has not been discovered, although we know that the virulent agent is at least in the pharyngeal mucus, and that the inroads of the streptococcic infection are made potent by this particular poison. We can find the same variety and number of streptococcic strains in an ordinary catarrhal pharyngitis; lacking the virulent agent, we do not get scarlet fever and its complications.

Scarlet fever is not as contagious to children in the same house as to children who come to visit from other houses. This is hard to explain, but, nevertheless, facts will bear it out. It may be on the gradual immunization that children in the same house acquire; for the writer has seen a single visit of a half-hour's exposure produce the disease in six to eight days in the visiting child. The carrying of the disease by third parties, unless there is gross carelessness, is very remote. The essayist has allowed a school teacher, who had been exposed for several days to scarlet fever, to return to her pupils after two days isolation, and there has been no cause to reproach himself. For that reason the disease can be easily stamped out in the country by closing the schools; whereas, in the city, from close and continuous contact of children in every nook and corner of the town, the closing, unless for a lengthened period, does not abate the disease.

The greatest contagium is not in the desquamation; the streptococci or staphylococci have never been found on the epidermal scales, although it must be acknowledged that the scales do not seem to harbor the scarlatinal virus. The repeated pealings (second) which we see so often, especially on the feet, are not contagious. P. Gallois[1] calls scarlet fever a contagious angina with a secondary eruption; the eruption is not important, hence isolation becomes unnecessary after the patient has recovered from the angina. Barlow[2] says the length of the infective period in some instances is only a few days. The source of the greatest danger lies in the nasal, pharyngeal and aural discharges. The contraction by the patient of a catarrhal rhinitis some weeks after he has left the hospital has been known to set up a re-infection and return of the scarlet fever. Enlarged tonsils, adenoids and hypertrophied turbinates certainly are disseminators of the disease. The nursing infant will contract the disease and so will the adult, but in both the exposure will have to be longer and closer than in measles.

Second attacks of scarlet fever are very rare and, when existing, are often a condition of only irritative sore throat, which is contagious and accounts frequently for the spread of isolated cases, or the re-appearance of a typical scarlet fever case in another member of the family. So it is that physicians, whether or not connected with hospitals, often get blamed unjustly for the spread of the fever.

Hematology.—There is perhaps but one point to be learned from the study of the blood of a scarlet fever patient in contrast to that of a measles patient, that the eosinophiles are generally increased not only after the fever, but also during the fever, and there is a leucocytosis. Sydenham, as long ago as 1661, pronounced scarlatina as an entity.

Treatment.—If there is one thing the writer is positive about in scarlet fever it is that suitable warmth to the body and milk diet give the best results. It was Jaccoud who laid such stress upon the sole use of milk. There are few or no cases that do not show a trace or more of albumin; and time and again the patients have been given animal broths, eggs, etc., only to see the albumin increase. Thompson[3] regards nephritis as part of the disease, and urges care in the diet, which should be milk and cereals for the first three weeks. K. Oppenheimer warns against allowing the patient to become chilled. The diet, he says, is more important than in any other infectious disease, on account of the tendency to nephritis. Rubens holds his patients to strict dietetic measures, avoiding all nitrogenous food and alcohol, and giving mainly a milk diet. In that way he wards off serious kidney complications.

(1) Bulletin Medical, Feb. 20, 1909.
(2) Practitioner, 1907.
(3) Edinburg Med. Jour., 1907.

The use of opium in any form has been found very pernicious. Quieting and rest in nervous cases can be easily attained by bromides and chloral. As long as twenty years ago, J. C. Wilson advocated the use of chloral in scarlet fever, claiming that it protected, in a peculiar way, the functionating parts of the kidney, that it did not depress the heart, but quieted the nervous system and allayed the itching. Ray[4] has confirmed all but one of these claims of Wilson's.

As a purgative, nothing is better than a little Rochelle salts flavored with orange or raspberry juice.

Many ear troubles are brought about by too much spraying and improperly blowing of the nostrils.

The use of the streptococcic serum has done no harm and much good in many ways. It is a logical procedure, and until we find the antivirus, a strain of the numerous streptococci should be used. As in all cases of scarlet fever streptococcic infection is found, a prophylactic measure in the use of injections of dead streptococci would seem indicated in severe epidemics. It was Gabritschewsky who introduced the use of injections of dead streptococci for curative as well as preventive purposes. In the few cases in which the writer used it and saw it used there were no complications and the period of the disease was very short.

Any symptoms of involvement of the middle ear should have prompt attention; paracentesis membranæ being first done, followed by hot boric douches; the temperature, leucocyte count, the pain, the swelling and tenderness over and in front of the mastoid must be carefully noted and guide us in further interference.

Several cases of involvement of the joints have been promptly relieved of pain and sepsis cut short by opening and draining the joint.

Some of the worst cases of coma and convulsions have been in neglected cases of scarlet fever. A blanket wrung out of hot mustard water in which the patient is wrapped; the giving of hot drinks or high retained enemata of water; the use of dry cups over the kidneys; all these have proven of aid.

919 *McPherson Square.*

(4) Therapeutic Gazette, 1907.

DIAGNOSTIC USES OF TUBERCULIN.*

By McGUIRE NEWTON, M. D., Richmond, Va.,

President Richmond Academy of Medicine and Surgery; Professor of Pediatrics, University College of Medicine; Attending Physician, City Home and Virginia Hospital.

About two years ago, Von Pirquet announced that the application of tuberculin to a scarification on a person suffering with tuberculosis would be followed by a local inflammatory reaction. Very soon after this, Wolff-Eisner and Calmette, almost simultaneously, announced that if a minute quantity of tuberculin be instilled into the conjunctival sac of a tubercular patient, a local reaction would follow in the course of a few hours. Whereupon, the attention of the medical world was directed to these reactions as possible aids in the diagnosis of incipient tuberculosis with the result that since then, no single subject has received more attention in the medical journals than the use of tuberculin diagnosis.

As is usually the case when a subject receives so much attention, the truth concerning it is so completely buried beneath a mass of matter born of enthusiasm or inspired by a spirit of antagonism, that one in search of it is apt to despair before completing his task. Appreciating the value of the knowledge of the truth concerning this subject, I have carefully studied its literature and to-night present for your consideration my conclusions.

First, let us refresh our memories as to tuberculin. In 1890, Koch startled the world with the announcement of his discovery of a substance which caused a specific reaction in persons suffering from tuberculosis, and which, when administered over a sufficient length of time, possessed a curative effect on tubercular processes. This substance he called tuberculin. It is prepared from a pure culture of the tubercle bacillus of five or six weeks' growth upon five per cent. glycerin-bouillon, which is boiled and evaporated to one-tenth of its volume, and filtered through porcelain to remove the bacilli. Tuberculin, therefore, consists of an extract of the bacilli together with such soluble products as were formed during their growth and not precipitated or destroyed by heat. From the fact that it is the original form of tuberculin it is known as Tuberculin O, and is the

*Read before the Richmond Academy of Medicine and Surgery, May 25, 1909.

substance usually referred to when the name tuberculin is used without any qualification.

All of us are familiar with the enthusiasm with which this remedy was received; and many of us remember too well some specific instance in which its application was followed by disastrous results. These were so numerous that its life as a popular remedy was exceedingly short. A few continued to study and use it, some for its curative effect but more for its specific reaction in the diagnosis of doubtful cases.

Until recently, its value in diagnosis was thought to be dependent on the general reaction following its use by subcutaneous injection. Now, more or less importance is attached to various local reactions, as that following its instillation into the conjunctival sac, known as the conjunctival or ocular reaction; that following its use by inunction, known as the percutaneous reaction; and that following its application to a scarification, known as the cutaneous reaction.

The subcutaneous method is still considered to be the most accurate and particularly so when the variations in the physical findings occurring during the reaction are noted; but owing to the character of the test and the danger attendant upon its use, it should be reserved for the specialists in tuberculosis, and with them all other means of diagnosis should be exhausted before it is resorted to. Consequently, I will not consider it further than to enumerate its disadvantages and the contraindications to its use.

Its disadvantages are that it is not applicable to febrile cases; a week or more is often necessary to complete the test; it requires frequent recording of temperature; the patient feels miserable for a day or more; it requires the introduction into the system of a poison in large doses.

Its contraindications are a temperature of 99.5 degrees; extensive physical signs; general glandular enlargement; disease of the kidney or heart; epilepsy; impaired nutrition; great dyspnea; hemoptysis within a month; and convalescence from acute infections.

The writers of recent articles have given more attention to the ocular or conjunctival reaction than to the others. This may be taken as an indication of its popularity, but it should not be considered as indicative of its harmlessness. This reaction was introduced almost simultaneously by Wolff-Eisner and Calmette working independently and using different methods in the dilution of the tuberculin. It consists in the instillation into the conjunctival sac of a minute quantity of tuberculin which, in the event of a positive reaction, is followed in from four to twenty-four hours by an injection of the palpebral and orbital conjunctiva, semilunar fold and caruncle which varies in intensity in different individuals, and is usually attended by lachrymation and moderate fibrinous or fibrino-purulent exudation which may go on to suppuration attended by marked swelling of the external as well as the internal tissues of the eye. This condition ordinarily reaches its maximum in twenty-four to forty-eight hours, after which it gradually fades, its complete disappearance bearing definite relation to the severity of the reaction.

Most of the writers enthuse over the ease of its application and its harmlessness; but there have been a sufficient number of serious results following its use to warrant one in protesting against it, and particularly so as no information is to be gained from it that can not be had from entirely harmless methods, as is evidenced by the fact that its most enthusiastic advocates can say no more than it will compare favorably with the other local reactions. On the other hand, it possesses the distinct disadvantage of being practically useless in the class of patients in which the local reactions are of greatest value, that is, in young children, for in them the tuberculin will be washed out or greatly diluted by the tears which usually follow any procedure to which they are unaccustomed.

Unlike the foregoing, the reactions which remain to be described are absolutely harmless and can be used in any case.

That reaction following the application of tuberculin by inunction is known as the percutaneous, and is described by Moro, its originator, as follows: "A tuberculin ointment is prepared by a combination of equal parts of old tuberculin and anhydrous lanoline. The lanoline base is used because with it, it is possible to prepare a very concentrated ointment. The mixture is made at a temperature of from 20 to 30 degrees C. Ten grammes of the ointment is sufficient for one hundred tests. The point of application is over the skin of the abdomen. In case the skin at this region is not clear, that over the breast is treated. The ointment is en-

ergetically rubbed on to the skin for from one-half to one minute. The area of the part to be treated is about two inches. The positive effect is noted by the eruption of a granular or papular efflorescence at the point of application," which appears in from six to twenty-four hours to disappear in several days.

This reaction has a distinct advantage in that it can be applied without puncturing or abrading the skin or producing any disagreeable sensation at the time of its application, and, as with the cutaneous test, the patient can be assured of its harmlessness and told that its most unpleasant effect consists in a disagreeable itching in the event of a severe reaction. Its diagnostic value is not quite equal to the cutaneous as it is not so sensitive, and it does not occur so readily in the pulmonary and progressive cases.

The *cutaneous reaction,* or that following the application of tuberculin by means of vaccination, was the first of this class to be described. Von Pirquet's attention was attracted by the fact that in primary vaccination against smallpox, the scarification immediately dries up and almost entirely disappears to be followed after several days by the appearance of the typical vesicle, while in the secondary cases, or those previously immunized, the vaccination is followed in about twenty-four hours by a slight local inflammatory reaction which subsides in the course of a few days. This led him to try the effect of vaccinnating tubercular patients with tuberculin, with the result that they showed a slight local reaction, whereupon, in May, 1907, he reported his observation and suggested that it might prove valuable as an aid in the diagnosis of tuberculosis.

The method of application is described by Von Pirquet as follows: "The skin of the forearm is scrubbed with ether; then two drops of undiluted old tuberculin are dropped about four inches distant from each other. Then, with a vaccinating lancet, the point of which has the form of a small chisel, a superficial circular scarification is made between the two drops (for the control of the traumatic redness following the small scarification). Finally, the same scarification is made inside of the two drops; a few fibres of cotton are put on the the drops so that they will not flow. After five minutes, the cotton is taken off. No dressing is applied. The scarifications are examined after twenty-four and forty-eight hours, and if the tubercular scarifications are clearly different from the control scarification, it is considered as positive, but the inflammatory area should measure at least one-sixth of an inch in diameter."

At the time of this announcement, it seemed to be the concensus of opinion that is was the most important contribution to the study of tuberculosis since the discovery of the bacillus; but it was soon learned that its diagnostic value had been over-estimated, inasmuch as healed or latent lesions reacted equally as well as active lesions. Consequently, a large number of persons in perfect health, who are unaware that they have ever harbored the bacillus of tuberculosis, will show a positive reaction.

Von Ruck finds reported the application of this reaction in 2,607 adults who were clinically free from tuberculosis, 40 per cent. of whom reacted. Consequently, a positive reaction in adults does not deserve any more attention than any other symptom, if as much. Its principal value in them depends on its absence, as it can be safely said that an adult who is repeatedly negative to this test is either free from tuberculosis or is suffering from the disease in an advanced stage, in which case the diagnosis should be readily made by other means. Since the liability of the presence of healed or latent tubercular lesions does not exist in early life, it is of greatest importance at this time.

In children of three years and under, I am convinced that we should pay as much attention to it as we pay to positive sputum findings later on. And I want to urge that when the pendulum swings from the use of these reactions, you will bear in mind that the cutaneous reaction is our most valuable diagnostic sign for a class of patients in whom we are deprived of satisfactory sputum examination; and in whom physical examination of the chest is, in most instances, impossible, and where possible, is of doubtful value; and in whom the ability to positively exclude tuberculosis as the cause of an existing impaired nutrition means that a feeling of hopelessness and inclination to stand by and wait for the seemingly inevitable, gives way to an energetic and hopeful fight with the result that the lives of some will be saved who would, otherwise, be left to die.

From the third year on, the diagnostic importance is reduced in proportion to the age of

the patient, and, in the language of Von Pirquet, "we can conclude that in older children the presence of tuberculin reactivity may be compatable with apparent perfect health." Therefore, in those over three years of age, a positive reaction does not warrant a diagnosis, but should serve to put the physician and patient on guard, inasmuch as a latent lesion may put on activity at any time.

A number of investigators have studied this reaction in its relation to prognosis, and, as the material used by them has varied from a dilution of from 1 to 10, to undiluted tuberculin, it is but natural that there should be marked variations in their interpretations; but they agree that the failure to react in the presence of unmistakable tuberculosis is an indication of a grave condition. Some moribund cases have been known to react on the day before death, and other cases have failed to react as long as three months before death, but these are exceptional.

At the Washington meeting of the International Congress on Tuberculosis, Detre described a modification of the cutaneous reaction which he claimed would make possible the differentiation between infection from the human and bovine types of tuberculosis. This modification consists in the application to separate scarifications of old tuberculin, bouillon filtrate of a culture of bovine tubercle bacilli and bouillon filtrate of a culture of human tubercle bacilli. He stated that in infection from either type there will be a positive reaction at the scarification to which the old tuberculin was applied, and also at that to which the corresponding filtrate was applied.

I cannot find any statistics concerning this modification, so in order to test it, I have applied it in three cases, with the result that in all three the reaction was practically uniform at all of the scarifications. It may have so happened that in each of these cases there was a mixed infection. Consequently, we had better withhold judgment until we hear from a larger number.

1008 *Floyd Avenue.*

The "Storm" Binder will be found of much value as a support in many cases of prolapsed kidney, stomach, numerous inoperable herniæ, as a post-operative binder, and for support in pregnancy, obesity and general relaxation.

ETIOLOGY AND PATHOLOGY OF THE SUMMER DIARRHEAS OF CHILDREN.*

By E. P. TOMPKINS, M. D., Roanoke, Va.

The most precious thing in the world is the human baby. This is brought home to us in the contemplation of decimated France, Germany, and other European countries. We know that upon the proper feeding of the infant of to-day depends the stamina of the next generation, and so the welfare of the nation. The child of to-day is the man of to-morrow, and upon his proper up-bringing depends whether a race of weaklings, or a generation of sturdy, strong, disease-resisting men and women will succeed us. This is our apology for threshing over a subject which, judging from the avalanche of literature that is pouring forth upon it, one might think had been well-nigh exhausted.

With these remarks by way of preface, I invite your attention to "The Etiology and Pathology of the Summer Diarrheas of Children."

Year by year the number of mothers who are able and who are willing to nurse their offspring grows less, until at the present time we are told upon the authority of special workers in children's diseases that less than one-fourth of the mothers in affluent circumstances are able to supply Nature's nourishment for their babies. This necessitates finding some substitute, and, in the vast majority of cases, we must fall back upon cows' milk, modified in various ways to make it approximate human milk.

First and foremost in the causation of summer diarrhea always is bad milk. One has only to compare the statistics as set forth in the text-books as to the mortality in the breast-fed on one hand and the bottle-fed on the other hand, to be assured of this fact; and, to contrast the relatively low mortality of the country—where milk is commonly kept below a temperature of 60 degrees F. by means of spring water (in this section at any rate), and is consumed sooner after coming from the cow—with that of the city, is to be doubly convinced.

Even chemically cows' milk is poor food for the baby. It has a different percentage of fat, proteid and sugar, and produces a coagulum tougher, denser and larger than breast milk.

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But such as it is we must use it, and do the best we can by intelligent knowledge to adapt it to the exigences of the occasion.

While formerly the proteid of cows' milk was looked upon as the most frequent disturbing factor in indigestion with diarrhoea in bottle-fed babies, more recent investigations point to the fat content as oftener the cause. Czerney and Keller have been foremost in these investigations, but their conclusions are corroborated by Brennaman and Walls, of Chicago. They say of the so-called curd in the bowel movements that they are fats or fatty soaps, that chemical examination will disclose their nature, and by feeding milk low in fat, regardless of high proteid, they can be made to disappear. This point may constitute an important advance in infant feeding. The milk of Jersey cattle—a milk always rich in butter-fat—is notoriously prone to disagree with young children. Fat being a heat and energy-producing element is the one presumably least needed in the hot summer in constructive metabolism.

Infants who do not enjoy the blessing of mother's milk, but who are artificially nourished, are greatly injured by overfeeding and overloading the stomach and intestines. If the child's stomach is not relieved by frequent vomiting, and the warning given by profuse evacuations of the disagreeable odor, and containing cheesy lumps is not regarded severe, intestinal symptoms soon appear. These cheesy masses irritate mechanically the mucous membrane lining of the intestine, increasing the peristalsis and bringing about a premature expulsion of the partly digested food. Added to the loss of nutrition thus caused is the baneful effect of a mass of partially digested food, forming a suitable culture medium for bacteria, saprophytes and sometimes pathogenic ones as well. The greatest irritation to the intestinal lining is caused by the bacterial toxins which are strong poisons. Not only the amount (quantitative cause) of the food, but its chemical nature (qualitative cause) should be taken into consideration. It is stated by Newman that the mortality of summer diarrhea is ninety-four times as great in infants fed on condensed milk as in those fed on breast milk.

At one time it was thought that sterilizing would do away with most if not all the bad effects of impure milk. But sterilized milk is cooked milk, and Nature never intended babies to live on cooked food. Heat sufficient to kill some of the harmful bacteria is sufficient also to destroy the beneficial ones which hold in check or destroy the dangerous ones. Yet this is not all the damage heat will do, and a lower degree of heat even than that required to kill the microbes. For instance, Hippius and Spolverini have proven the presence, both in mothers' milk and in cows' milk, of a ferment which is destroyed or enfeebled by only a moderate amount of heat. Spolverini says that the sterilization of milk produces six disadvantageous changes in it, namely:

First.—It expels the carbonic acid gas which stimulates the secretion of the gastric juice.

Second.—Diminishes the amount of lime and free phosphoric acid, increases the insoluble calcium phosphate, and precipitates the anti-scorbutic citric acid.

Third.—Destroys a large part of the lecithin of the nuclein.

Fourth.—Coagulates the soluble albumin and changes and renders unabsorbable the casein.

Fifth.—Unites the fat globules in larger masses which are less easily digested and absorbed.

Sixth.—Destroys or weakens the ferments, and thus are lost to the child antitoxic and immunizing compounds of great value.

Behring has shown that fresh cows' milk has a very active anti-body antagonistic to the bacterium cole commune, and a weaker one to protect against the bacterium lactis. These anti-bodies are destroyed by boiling the milk; on the contrary, however, their power is said to be increased by the addition of formalin 1 to 5,000, or 1 to 10,000.

Heating milk does not purify it, for there are still left the dead bacteria, and their toxins will cause disease, usually diarrheal in nature.

The extraordinary sensitiveness of the intestines of nurslings to cows' milk and other food is well known and the tendency to diarrhoea is usually attributed to bacteria. Yet Nature is ever on guard with her protective forces at work, some of which we know, many of which we have yet to learn. The nucleinic acid of the lymphoid cells possesses bactericidal properties, as does to less extent also the free hydrochloric of the gastric juice, and the biliary

acids as well. At any rate the average child has, fortunately for it, as one writer says, "an almost uncanny power to resist virulent organisms." If it had not, then this world would probably long since have been a howling wilderness. At birth the intestinal canal contains no bacteria (Billroth), but each hour of extrauterine life increases the number of bacteria conveyed into the alimentary tract of the nursling from its surroundings. Just here might be mentioned the common and reprehensible habit of putting into the mouths of babies the rubber or ivory abominations called "pacifiers" or "comforters"—a fertile source of germ conveyance, part of the time in the baby's mouth, and part of the time rolling about the floor or sidewalk. One authority estimates that from five to ten per cent. of all deaths in infants under two years old is due to infections from such or similar means (Hirshberg).

Bacteria are found to be most numerous in the lower bowel. Those in the small intestine are almost wholly the originators of fermentation, while those lower down have to do with proteid decomposition. According to the food then, a surplus of products of fermentation produces *acid diarrhoea,* or an abnormal proteid decomposition a *fetid diarrhoea.* Often severe forms of diarrhoea, which threaten the life of young children by intoxication or infection are produced by definite, more or less specific kinds of bacteria, to be presently mentioned, and are influenced by season and climate, and particularly by heat. Humidity and rainfall, according to Siebert and Baginsky (quoted by Holt), do not influence the prevalence or the mortality of summer diarrhoea.

Heat was once regarded as a direct cause. High temperature by producing constitutional depression may interfere with digestion undoubtedly and so cause diarrhoea. The excessive thirst of hot weather may also lead to the taking of too much food or drink, but these are minor causes. It is almost universally held at the present time that summer diarrhoea is of infectious nature. An average minimum temperature of about 60 degrees F. is needed to start the epidemic, as this is the temperature at which the growth of bacteria begins to grow active. Cows' milk, as ordinarily handled, always has a multitude of bacteria, and these are increased in number directly with the temperature of the milk. The lower the resisting power of the child from extrinsic or from inherent causes the more quickly will it give way to the assault of the germs. Which brings us to a consideration of these—the ever-present actual and active causes of Summer Diarrhoea. Upon this subject I cannot do better than to invite your attention to an article, learned and lengthy, published in the April, 1908, number of *Archives of Pediatrics,* by Dr. J. H. Mason Knox, of the Johns Hopkins and of the Thomas Wilson Sanitarium, from which I take the liberty of largely drawing.

In 1898, Shiga, a Japanese investigator of Tokio, found a bacillus with distinctive characteristics which he believed to be the cause of dysentery. Two years later Dr. Simon Flexner discovered a similar germ in the dysentery of the Philippine Islands. These two bacilli are almost identical, differing only in their action upon certain sugars. To these two a third bacillus, namely, the Y-bacillus of Hiss and Russell, is closely related, and the lesions produced by the different strains is identical. That most frequently found in the United States is the Flexner type. The Rockefeller Institute in 1903 conducted a series of investigations in several Northern cities, as to the relation of the bacilli to infantile diarrhoea. In four hundred and twelve cases they were found to be present in over sixty-three per cent. They were associated with all grades of diarrhoea, from the mildest to the most severe, both acute, sub-acute and chronic; and it may be regarded as established that they are the causal factor in a very large number of the cases of summer diarrhoea which we encounter. As to the role played by other organisms in the etiology many questions still remain to be answered. Flügge, in a painstaking research some years ago, demonstrated the frequent presence in milk of several strains of anerobic and peptonizing bacteria, notably the hay-bacillus, which produces spores and are not destroyed by ordinary methods of sterilization. They also multiply rapidly at comparatively low temperatures. They do not curdle milk, but do bring about in it marked changes before their presence becomes noticeable. Imperfect sterilization, by destroying the lactic acid bacteria only facilitates their growth. Flügge considers them responsible for many of the diarrheas of children.

Tissier has reported the finding of a certain

anerobic, peptonizing bacillus which he believes to be responsible for some diarrhoeas.

The proteus vulgarus and other more or less normal bacteria found in the intestinal canal have occasionally been shown to be definitely toxic. Several epidemics due to *bacillus pyocyanus* have been described by Calmette and others.

Streptococci have been demonstrated by many observers. Whether they are or are not more concerned in the anatomical changes brought about in the intestinal mucosa, than as a primal cause, remains to be proven. Concentrated sweets are said to produce sometimes erosion of the intestinal lining; milk that has been frozen has been the cause of diarrhoea, as pointed out by Dr. Shelmerdine, of Philadelphia; the acid of fruits and vegetables may give rise to indigestion with diarrhoea, and it may be that often the bacterial invasion is secondary to processes thus begun.

There have been a few cases in which the dysentery bacilli have been found in the stools of apparently normal infants, but in every case in which this has occurred the child had either had a previous diarrhoea or had been exposed to infection from other cases. The conclusion seems to be warranted that when bacilli of known pathogenic properties are found in great numbers in diarrhoeal stools, they are causally related to the disorder. Attempts have been made, but without success, to connect the dysentery bacillus with some definite clinical type of disease. On the contrary, wherever a series of cases of summer diarrhea has been studied by a competent bacteriologist, these germs have been found, not only in cases of the acute toxic type, but also in those longer in duration and with more marked alteration in the mucosa.

Infants are comparatively rarely affected by the Shiga strain, but more usually the Flexner type is found. The cases infected by the true Shiga type are more severe, as a rule. Fifteen sub-varieties of this organism have been studied by Ohno, a Japanese bacteriologist. The method of propagation of the various *bacilli dysenteriae* is still largely undetermined. They have no natural habitat so far as known outside the body, and their life is then short. They live longer in the dark and at a comparatively low temperature, being killed by two and a half hours' exposure to direct sunlight in running water. They never multiply in water and are killed in four to six days by saprophytes. They live in the intestine, however, long after the cessation of all symptoms.

Pathology.—I shall not attempt to differentiate, except in the most general way, as to the pathology between the various grades of diarrhoeal diseases, as they shade into one another so gradually that there is no sharp line of demarcation, and it is not always easy to distinguish between a simple congestion when no ulceration has occurred, and an inflammatory hyperemia. The character and the amount of the lesions vary with the severity of the cases. In the milder cases opportunity for making post-mortem examinations is found only by reason of death from intercurrent affections.

In this class of cases no lesions are found, the disease being only an acute desquamative catarrh. There may be some congestion of the intestinal mucosa with hypersecretion of mucus. Unless autopsy is done soon after death, the post-mortem changes may be mistaken for lesions occurring during life. The stomach walls particularly may be softened by self-digestion.

In more protracted cases the stomach may be partly filled with undigested food and gas. Its walls are sometimes congested in patches, sometimes pale. There may be thick and tenacious mucus. The stomach is more resistant to infection than the intestinal walls, due probably to the more absorptive character of the latter. At times the whole intestinal tract may show a "washed out" appearance. The upper part of the small intestine is usually empty; it may have areas of congestion, particularly in the ileum. Often there is considerable redness and swelling of Peyer's patches and the solitary follicles, which are raised above the surface. Evidences of inflammation are uniformly more frequent in the cecal portion, especially around the ileo-cecal valve. Dr. Lewis Smith states he has found the orifice reduced to small size by thickening of the valve, but with no evidence of obstruction. In cases of the severe type and more protracted, ulcers of small size have been found in the small intestine in four or five per cent. of examinations, circular or oval in shape, and quite superficial. It has been found possible to readily detach the mu-

cous membrane of the intestine with the fingernail or a blunt instrument, within so short a time after death as to preclude idea of cadaveric changes.

In a series of eighty-two in number recorded by one writer there were found inflammatory lesions in the colon in every instance except one. In thirty-nine of these cases they extended over practically the whole length of the colon; in fourteen cases they were confined to the descending portion; in the remainder location not stated. In eighteen cases the lining was ulcerated. The part of the bowel most frequently affected is the sigmoid flexure and the portion immediately above it. Viewed by transmitted light, the glands appear swollen, with the central part darkened. Their enlargement is due to cell-proliferation.

In the class of cases clinically called cholera infantum the pathological changes are marked. The entire intestine, including the colon, is distended with gas, and contains thin, grayish-white material not of particularly offensive odor. Bacteria are found in the follicles and in the superficial epithelium upon microscopic examination but not found as a rule in the lymph nodes.

Ulcers are found more frequently in children over six months than under that age, glandular activity being then greater.

The rectum presents few if any lesions. Stomatitis is present in a fairly large percentage of young infants, but is rare in older ones. The buccal surfaces are ordinarily more vascular than natural. Careful examination discloses nothing abnormal in the liver. Intussusceptions are frequently found, but are believed to have occurred at the moment of death or very shortly before. In infants who have died after a protracted illness, there is always an apparent overlapping of the cranial bones, due to shrinkage of the brain substance.

PLACENTA PRAEVIA.*

By WILLIAM F. DRIVER, M. D., Ph. G.,
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A full discussion of every problem arising in a case of placenta praevia would be utterly impossible in the time allotted for this paper; I shall therefore confine my remarks to some of the more prominent factors relating to this disorder, with a brief review of three cases which have come under my observation during the past year.

The characteristic properties of the parturient uterus are contractility and retractility of the upper segment and dilatability of the lower segment. Under normal conditions the placental site is confined to the region of the upper or contractile portions of the organ; but when this attachment extends beyond these limits, we have the condition offering the subject for this paper. Placenta praevia, then, is an attachment of the placenta, in whole or in part, in the zone of *dilatation* of the uterus. This definition suggests various degrees of the disorder, depending upon the amount of placental attachment to the dilating uterine segment, and may vary anywhere between a normal attachment and a complete occlusion of the uterine os.

Varieties.—Edgar makes the following classifications:

Lateral—when the placenta does not reach the internal os.

Marginal—when the placenta does not reach beyond the internal os.

Partial—when the placenta partially covers the lumen of the internal os after complete dilatation.

Complete—when the placenta covers the lumen of internal os after complete dilatation.

Frequency.—It is difficult to form any definite conclusions in regard to the frequency of this disorder, but statistics seem to indicate that there is one case in from two hundred and fifty to one thousand pregnancies. It is thought that in general practice the latter figure is about correct, but if consultation and emergency cases are counted, the frequency may easily approach the former estimate. It is more frequent among the poorer classes, and in multigravidae than in primigravidae, and in certain years than others.

Etiology.—It may be said that any cause which may result in a faulty attachment of the ovum may be an etiological factor in the condition. The facts that it is more frequent in multigravidæ than in primigravidæ, and in the poor than in the well-to-do, suggest the probability that the condition of the uterus is solely responsible for the anomaly; as it is in these classes that we find a preponderance of condi-

*Read before the Shenandoah County Medical Society, at its meeting in Woodstock, Va., June 16, 1909

tions leading to subinvolution and relaxation of the uterus, which, in turn, favor congestions and changes in the uterine mucosa which is probably the fundamental cause. Various malformations of the uterus may also predispose to the condition.

Symptoms.—Usually there are no symptoms in the early months of pregnancy, but later without warning, there may appear a sudden hemorrhage varying from a few drops to several pints, depending upon the amount of placental separation. The nearer the approach to term the greater is the liability to hemorrhage, and the more nearly complete the placenta praevia the earlier and more profuse will be the hemorrhage. The amount of blood lost during the early months of pregnancy is not so apt to be dangerous, but during the later months or at the beginning of labor, the loss may be sufficient to produce violent constitutional symptoms of hemorrhage or even death within a few minutes.

Diagnosis.—Hemorrhage during pregnancy, and especially in the later months, demands immediate investigation to ascertain its cause; as recurring hemorrhages near term are usually due to abnormal attachment of the placenta. The diagnosis must rest on physical signs. When the placental attachment extends over the anterior wall of the uterus a diagnosis may be made by abdominal palpation; but the most important signs are discovered by vaginal examinations, consisting in an absence of ballottement, difficulty in recognizing foetal parts, and, above all, the palpation of placental tissue through the partially dilated os.

Prognosis.—Placenta praevia is a dangerous complication of pregnancy and labor for both mother and child, and the dangers increase in direct proportions to the degree to which the placenta is praevia. Death to the mother is due to hemorrhage, sepsis, air embolism, shock of rapid dilatation and version, and rupture of the uterus; while the foetus may be sacrificed from prematurity, version, asphyxia, malpresentations, and inspiration pneumonia. Hemorrhages occurring near term offer a better prognosis to both mother and child, as the emptying of the uterus can more readily be accomplished. For the same reason multigravidæ offer a better prognosis than those pregnant for the first time.

Treatment.—There is no preventive treatment of this condition. If labor is progressing we have four objects to accomplish: First, and above all, stop the hemorrhage; second, empty the uterus; third, secure hemostasis; fourth, combat the anemia. As the chief element of danger is hemorrhage, its control is, therefore, the principal indication in treatment. In cases where labor is not in progress and there is little or no dilatation of the cervix, vaginal tamponade is an efficient means of controlling hemorrhage; or, if the cervix is dilated, cervical tamponade, rupture of the membranes, or the introduction of one of the forms of elastic bag, which is distended till the canal is successfully plugged. This not only controls hemorrhage, but promotes dilatation of the cervix more effectually than does the vaginal packing. If, after a severe hemorrhage, your patient is suffering from acute anemia or collapse and is losing no blood, it is advisable to pack the lower uterine segment and vagina and wait for reaction to ensue before completing dilatation and delivery. In cases where rapid delivery is indicated, manual dilatation may be necessary, but it is hardly applicable unless dilatation is fairly well advanced, and it also has the disadvantage of being attended with considerable shock. Podalic version is one of the most effective measures of controlling hemorrhage in placenta praevia, since the foetus serves as a plug, filling the cervix securely throughout the entire course of birth. This procedure is also attended with shock and should not be attempted where the patient has lost much blood. Having controlled the hemorrhage, labor being in progress, delivery may be safely left to nature; or it may be hastened when required for the interest of either mother or child, with forceps, podalic version or breech extraction. As soon as the child is delivered, hand it over to an assistant and use every effort to prevent hemorrhage, as a small hemorrhage here may be fatal to the mother. Even a moderate hemorrhage demands immediate removal of the placenta, and, following this, brisk uterine massage, hot uterine douche or pack uterus and vagina with sterile gauze, and administer some form of ergot hypodermically. The anemia resulting from the severe loss of blood may demand treatment before, during and after delivery. If the mother has lost much blood, give her warm saline solution under the skin, and not per rectum, as it is impossible to secure

local asepsis with the bowel movements constantly contaminating the field of operation. Raise the foot of the bed, bandage the extremities, give stimulants hypodermically as required, and after the dangers of immediate death from anemia have passed administer iron along with nutritious foods in a form readily assimilated.

It has been my misfortune in the last year to see three cases of placenta praevia, which fact has prompted me to present this paper, and I herewith append a report of each.

I was called in consultation with Dr. P. W. Morehead, of New Market, Virginia, October 30, 1908, through whose courtesy I am permitted to report:

Case No. I. Mrs. L.; occupation, housewife; white; age, 38 years; mother of six children; previous history, negative. History of numerous repeated hemorrhages during this pregnancy, which began about mid term, several of which were severe. Labor was in progress and hemorrhage under control at the time of my arrival, and examination revealed a placenta covering the greater portion of the dilated os. Under choloroform anæsthesia, a podalic version was done and labor terminated in a short time, without further complications. The child was badly asphyxiated, but responded nicely after about twenty minutes strenuous work at artificial respiration, and the application of heat. Both mother and child have made good recoveries.

Case No II. Mrs. G.; occupation, housewife; age, 35 years; white; mother of eight children, and has had one miscarriage during thirteen years. Previous history negative. Was hurriedly called April 20, 1909, the messenger stating that she was expecting to be confined and bleeding terribly. On my arrival the hemorrhage, which had amounted to more than a pint, had almost ceased. An examination revealed an os dilated to admit two fingers, with the edge of the placenta easily recognized just within. The cervix and vagina were packed with cotton, and as the patient was in easy reach of my home and in good condition, I left her. The next day at noon I was again called and found her having labor pains, dilatation practically complete, head presenting. The membranes were ruptured and labor completed without further assistance in about three hours. In this case more than a double handful of blood clot from concealed hemorrhage was expelled just before the delivery of the placenta. There were no further complications, and both mother and child made uneventful recoveries.

Case No. III. Mrs. Z.; occupation, housewife; age, 30 years; mother of one child eighteen months old. Previously healthy. On March 28, 1909, had a moderate hemorrhage in the sixth month, which, on my arrival, had ceased, and, with the exception of several slight hemorrhages not reported, there was no further disturbance until May 11. At this time she lost over a pint of blood, which materially affected her circulation and general strength. The vagina was packed tightly controlling the hemorrhage, and as she was not in labor and still more than a month from term, I ordered her to remain perfectly quiet in bed. On the 13th, however, against my knowledge,, she arose and was moving about her room, when about 8 P. M. she suddenly began to bleed profusely, rendering her almost pulseless and in a state of collapse within a few minutes. Hemorrhage was again controlled with tampon and assistance summoned. The symptoms of acute anemia were marked, but in a few hours she had rallied perceptibly and fell into a sleep, resting fairly well until 4 A. M., when she again began to bleed. This was again controlled by repacking. The os would admit two fingers and there were now slight labor pains, which had no apparent effect upon the progress of labor and in a few hours these ceased. During this time there was no hemorrhage, but the patient did not react as on previous occasions.

A third physician was called, who responded promptly, arrangements necessary for rapid delivery being made by the time of his arrival. Having decided to deliver, the patient was put under ether anesthesia, warm saline solution being administered under the skin at the same time. There was considerable shock during the first stage, and as the head was presenting, it was decided not to add the shock of version, but to do a high forceps delivery, which was accomplished in a comparatively short time. There was no further hemorrhage. The placenta was delivered without difficulty and good uterine contraction secured. The foetus in this case perished from asphyxia, due to the effects of

hemorrhage, but the mother has made a good recovery.

I am indebted to Drs. P. W. Morehead and W. A. Vaughan for valuable assistance rendered in this case.

Analyses, Selections, Etc.

Bacterial Vaccines in the Treatment of Diseases.

Dr. C. J. Bartlett, of New Haven, read a paper before the Connecticut State Medical Society at Hartford, May 26, 1909, in which he first outlined briefly the development of the opsonic method. Bacterial vaccines were contrasted with antitoxins and the general principles underlying vaccine therapy were discussed. This method of treatment is specific in the strictest sense of the word. In the majority of infections, autogenous vaccines must be used in order to obtain satisfactory results. Wright insists that the frequent determination of the opsonic index is essential, but in this country many of those who are using vaccines are evidently disregarding the index and have obtained good results. Localized staphylococcus infections are particularly favorable to this form of treatment. Hartwell and Lee emphasize its especial value in the treatment of boils about the face to prevent scarring. It has proved of value in severe cases of Rigg's disease. According to Wright, antiseptics should not be used together with vaccine therapy, as they counteract the action of the opsonins. Ross and others report excellent results in cases of erysipelas. Gabritschewsky's prophylactic work against scarlet fever by means of streptococcus vaccines is interesting, but requires confirming. A few cases of streptococcic endocarditis and puerperal sepsis with favorable outcome under vaccine therapy are reported but this result is the exception and not the rule. Autogenous not stock vaccines should always be used when possible. Of gonorrheal infections, gonorrheal arthritis appears most amenable to vaccine therapy. Aronstam has reported favorably on its use in acute urethritis and Hollister and others in gonorrheal vulvovaginitis. In cystitis and pyelitis, due to the colon bacillus, it has been used with good results. Always use here an autogenous vaccine and make the urine alkaline. In typhoid fever Richardson's results and the very recent report of Watters are encouraging. Two cases of actinomycosis, successfully treated, have been reported. Pneumococcic endocarditis is not favorably affected by vaccines. A case of favus of twenty-three years standing, cured by vaccines, has just been reported by Perssons. From theoretical considerations, it seems probable that better result than yet reported may be obtained in general infections if appropriate vaccines can be used very early in the disease. Latham's results in administering vaccines by mouth indicate the possibility of simplifying vaccine therapy. For the successful employment of this method of treatment more accurate diagnosis than in the past must be made. Laboratory experts must be called upon more frequently than heretofore. The dosage of the different vaccines and the intervals between injections was then discussed.

Hemolysis in the Diagnosis of Malignant Neoplasms.

In a paper on the above subject, read by Dr. Harold Sears Arnold, of New Haven, Conn., before the Connecticut State Medical Society, May, 1909, the author reviews the work done in the field of blood changes wrought by malignant growths, particularly that which has bearing upon the solution of corpuscles by blood serum. The findings of Weil and Crile of this country and of other investigators in Europe are cited, and their experience compared with that of the writer.

In a series of fifty-three hemolysis tests conducted with Crile's technique, eleven out of twelve cancer cases gave positive hemolysis tests. One case of diabetes complicated with tuberculosis, and one case, that of a moribund patient with atrophic cirrhosis of the liver, gave reverse hemolyses.

The remainder of the cases were patients with typhoid, pneumonia, endocarditis, nephritis and rheumatism. All were negative, excepting one, a case of lobar pneumonia. A patient with osteitis deformans gave a negative test.

The conclusion drawn is that while the hemolysis test is far from infallible, it is a reaction of value in the diagnosis of malignant growths.

Book Notices.

Bacterial Food Poisoning. By PROFERROS DR. A. DIEUDONNE, Munich. Translated and Edited with Additions by DR. CHARLES FREDERICK BOLDUAN, Bacteriologist Research Laboratory, Department of Health, City of New York. New York. E. B. Treat & Co. 1909. Small 8vo. 128 pages. Cloth, $1.

This is a "concise exposition of the etiology, bacteriology, pathology, symptomatology, prophylaxis, and treatment of so-called ptomaine poisoning." It is a *practical* book, useful alike to the physician and to boards of health. It describes the conditions resulting in poisonings by meats of various kinds, fish and molasses, cheese, ice cream, potatoes, canned goods and certain metallic poisons, as arsenic, copper, etc., used for canned foods, etc. Symptomatology, treatment of the conditions, etc., are also pointed out. The book is an exceedingly valuable one for every practitioner to use in emergencies, as also to guide him in giving advice in families. Food inspectors for cities, etc., should also keep the teachings of this book well in mind. A good Index is appended which greatly helps when in need of hasty reference.

Seven Hundred Surgical Suggestions. By WALTER M. BRICKNER, B. S., M. D., Assistant Adjunct Surgeon, Mount Sinai Hospital; ELI MOSCHCOWITZ, A. B., M. D., Assistant Physician, Mount Sinai Hospital; and HAROLD M. HAYS, M. A., M. D., all of New York city. Third series. New York. Surgical Publishing Co. 1909. 12mo. 153 pages. Semi-de-lux, $1; full library de luxe, ooze leather, gold edges, $2.25.

This book contains 700 "practical brevities in surgical diagnosis and treament," especially useful to the young surgeon, to the assistant, or even to the surgeon of experience in cases of emergency. The "suggestions" are arranged according to parts of the body to be operated on. While some, of course, are superfluous, such as not laying instruments on the open eye during anesthesia, etc., the vast majority of them are most valuable. The first edition, two years ago, contained 500 suggestions. The exhaustion of two editions in this length of time has shown the demand for the book, and this third edition contains 200 more "suggestions." It is of a size that can easily be carried in the hand grip, which the surgeon or assistant can use at any moment as a ready at hand remembrancer. It is well worth the price of $1.

Editorial.

American Medical Association.

The session of this Association at Atlantic City, New Jersey, June 8-11, was largely attended and many papers of interest and value were presented and discussed. The next annual session is to be held at St. Louis, Missouri.

The newly elected officers are: Dr. William H. Welch, Baltimore, Md., President-Elect; Drs. Robert Wilson, Charleston, S. C.; Charles J. Kipp, Newark, N. J.; Alexander Lambert, New York, N. Y., and Stanley P. Black, Pasadena, California, Vice-Presidents; Dr. Frank Billings, Chicago, Ill., Treasurer, and, notwithstanding his recently exposed record, Dr. George H. Simmons was re-elected Secretary and Editor-in-Chief of the *Journal*. This latter official was re-elected without even the pretense of an investigation being made—so fas as we can discover from an examination of the minutes of the meetings of the House of Delegates—to determine the truth or falsity of numerous serious charges made by Dr. G. Frank Lydston, an eminent specialist and author, as well as professor in the medical department of the University of Illinois. In fact, it seems that his election was made something of an ovation—winding up with the presentation to him of a token in which this "peerless leader" is held. There can be no objection to this demonstration on the part of his friends who believe him to have been abused and maligned, but it was due to the great body of American practitioners that the charges as brought out in publications by Dr. Lydston and others should have been investigated and an unbiased judgment rendered. It would seem that it was due to Dr. Simmons himself, in view of the widely circulated accusations, to have been "investigated," and have matters sifted to the bottom. As the matter now stands, there is neither acquital nor censure—thus leaving the whole question in an unsettled state, which cannot be satisfactory to members of the Association, and widespread dissatisfaction is compelled to result.

The Board of Trustees, of which the eminent President-elect was Chairman, in its report to the House of Delegates of work done during the past year, and in referring to the attacks made, takes occasion to throw bouquets at Dr. Simmons for the great things he has done, and, indicating that the charges originated with the proprietary and patent medicine people, says: "The animus back of this attack and the interests that are aiding and abetting it are not difficult to understand," etc.

Dr. J. N. McCormack, of Bowling Green, Ky., in presenting his report of the Committee on Organization to the House of Delegates, in referring to the quack medicine and "low-grade proprietary" people, among other things, said: "Early this year, correspondence accidently fell into our hands showing that these interests, recognizing that this desultory warfare had failed, were organizing a far-reaching conspiracy, with unlimited means back of it for a final, concentrated attack on their arch enemy, the one man who has done more than all others to expose their nefarious impositions on the profession and people, our friend, Dr. Simmons."

As previously stated, we have been unable to find anywhere a statement to the effect that the charges against Dr. Simmons were either investigated or disproved. Was there an official inquiry? And what evidence did the Board of Trustees and Dr. McCormack have to justify them in asserting that the charges were the result of conspiracy? If such was the case, would they not have done well to have stated the facts to a much interested profession? Surely, methods so detestable should be exposed.

Doctors and Lawyers.

We recognize in the legal profession many eminent, and truly good, great men. Otherwise, we would long since have lost confidence in the award of justice through our Courts. But one, as he looks at the Bar, is often impressed that there are an undue number of tricksters in the legal profession who do not tend to elevate their profession to the high rank of honest, just dealings with their fellow men. We are reminded as we write of the case of an attorney who, in defending an unjust suit, made up a sentence of law that, had it been law, would have been strongly in favor of his client; but who, when asked by the lawyer of the other side for the exact reference, closed up the book from which he was apparently reading, and remarked: "D—n it, I find my law; you find your own."

A short while ago, a lawyer came to our office to select a medical book with reference to some traumatic neurosis case—not for the purpose of getting at the real facts, but, as he expressed it, solely for the purpose of "balling up" the two medical experts ready to testify for the injured man. We declined to loan him the book for any such avowed purpose, though willing enough to loan him the authority if he was intent upon bringing out "the truth, the whole truth, and nothing but the truth." His whole intent appeared to be simply to get up some "catch questions" only for the purpose of tripping the doctors in their expert testimony—although confessing, in effect, that as defendant for the Company he was representing, the decision of the case would probably result upon the confusion he could secure in the expert testimony.

We do not pretend to say that there are not also doctors who can be bought up for a price—even when their medical convictions as to the possible results of injuries may be entirely different from their testimony. But we do mean to say that such evidence borders on perjury, and degrades the medical profession.

We are not speaking of cases where honest doubts exist, nor do we object to giving the prisoner the benefit of a doubt. But we protest against the legal and moral wrong of trying to make a fact that is clearly and plainly criminal appear as if it were innocent or excusable. And so with the lawyer—let him confine himself to facts as developed by honest witnesses or honorable experts, without intriguing efforts to trip or "ball up" those reliable parties who give straight-forward testimony in any given case. Then the Courts of the land will become truly proper resorts for the bestowal of justice.

Another view of the matter, as experienced in the statement of the lawyer to us, that his sole purpose was to "ball up" the doctors' expert testimony is expressed in the moral as well as biblical text, "Do unto others as you would that others do to you." What doctor could feel thankful to another doctor for suggesting

purely "catch questions" to the lawyer for the sole purpose of vitiating honest testimony—whether positive or expert? Let the high principles of honor and truth prevail in each of the two professions, and then proper respect will be the outcome of one to the other.

The Shenandoah County Medical Society

Held its regular meeting at the Holtzman Hotel, Woodstock, Virginia, June 16, 1909, and was probably the best in the history of the Society.

Dr. Edwin M. Hasbrouck, Washington, D. C., read a paper on Local Anesthesia in Major Operative Work, and illustrated with an operation for the radical cure of hernia. Dr. H. H. Biedler, Baltimore, Md., presented a paper on the Etiology, Diagnosis and Treatment of Appendicitis, and Dr. Thomas L. Richardson, also of Baltimore, a paper entitled Health Officer, Physician and People in their Relation to Each Other in Communicable Diseases. Dr. William F. Driver, New Market, Va., read a paper on Placenta Praevia.

The Society recommended the following to be appointed as County Health officers: Drs. A. P. Belew and B. R. White (present incumbents), and Dr. W. F. Driver to fill the vacancy caused by the death of Dr. C. C. Henkel.

Dr. Ennion G. Williams, of Richmond, gave a health talk in Woodstock on the night of June 16th, and one in New Market the next night. Both were well attended and instructive.

The Medical Society of Northern Virginia and District of Columbia

Held its annual session in the Piedmont Club rooms, at Warrenton, Va., June 24th. Dr. Stephen Harnsberger, of Catlett, Va., was elected President for the coming year; Drs. George B. Fadeley, of Falls Church, and J. H. Selby, of Warrenton, Vice-Presidents, and Dr. Chas. A. White, of Washington, D. C., was made Secretary and Treasurer. After the reading of papers and attention to routine business, the visiting members were entertained at the Warren Green, by Drs. Hicks, Harnsberger, Maphis and Selby.

The next meeting will be held in Washington, D. C., during November.

Councilor for Eighth Congressional District of Virginia.

Dr. Tunis C. Quick, of Falls Church, Va., was duly elected Councilor for the Eighth Congressional District at a meeting of the physicians of that District held at Warrenton, Va., June 24, 1909.

The Bedford County Medical Society.

Held its regular quarterly meeting at Bedford City, Virginia, June 28th. This was the date also for election of officers, who were elected as follows: President, Dr. John W. Sale, Bedford City; Vice-President, Dr. W. O. McCabe, Thaxton; Secretary and Treasurer, Dr. J. A. Rucker, Bedford City.

On motion, it was agreed to assess each member one dollar, to be applied towards the expense fund of the Legislative Committee of the Medical Society of Virginia in their efforts to secure repeal of the *Special* State License tax on doctors.

The Patrick Henry Medical Society

Will meet at Martinsville, Virginia, July 15, 1909. The program as announced is as follows: Dr. B. F. Tatum, of Stuart, will read a paper on *Ileocolitis;* Dr. J. R. Perkins, of Spencer, *Uncinariasis;* and Dr. J. M. Shackelford, of Martinsville, will tell of the *Duty of the Physician to the Laity.* This will be followed by Reports of Cases. The officers of the Society are: President, Dr. Moir S. Martin, Stuart; Secretary, Dr. J. R. Perkins, Spencer, Va.

Dr. Eugene Lee Crutchfield,

Of Baltimore, Md., Fellow and Gold Medalist of the Society of Science, Letters and Art, of London, England, has been elected a Fellow of the American Academy of Medicine. This is the most exclusive medical association in the United States. Only those are eligible for admission who either have pursued the full curriculum leading to the degree of A. B., B. S., or A. M. in a reputable college or university, or can produce evidence of undoubtedly equivalent attainments. Such requirments make the Fellowship of the American Academy of Medicine an honor to be coveted.

Dr. Wm. F. Drewry Honored.

The American Medico-Psychological Association, at its recent session in Atlantic City, N. J., elected by acclamation Dr. Wm. F. Drewry, Superintendent Central State Hospital, Petersburg, Virginia, President for the ensuing year. This is regarded by insanity experts, alienists, etc., as one of the highest honors in the profession in America.

Dr. Drewry is also President of the National Epileptic Association, and he has been invited by the officers and managers of the Ohio hospitals to address them during the month of July on the Care and Treatment of the Insane.

Progress in Cuba.

The Republic of Cuba has established a Bureau of Utility and Information, President Gomez appointing Leon J. Canova, an American newspaper man, who has resided in Cuba eleven years and has a wide reputation with the Island, as its director.

Parties wishing information of any nature concerning Cuba can obtain same, free of charge, by writing to Leon J. Canova, U. and I. Bureau, Department of Agriculture, Commerce and Labor, Havana, Cuba.

The Annals of Surgery for July

Will be the biggest number, so it is announced, of any medical journal ever issued. It will contain twenty-six articles, read by the respective contributors at the meeting of the American Surgical Association at Philadelphia, June 1-3. *Annals of Surgery* is edited by Lewis Stephen Pilcher, M. D., LL. D., of New York, and is published by The J. B. Lippincott Co., Philadelphia.

Examination for Pathologist, Freedman's Hospital.

The United Civil Service Commission announces an examination on July 14, 1909, to secure eligibles from which to make certification to fill a vacancy in the position of male pathologist—$2,000 per annum—Freedman's Hospital, Washington, D. C. No application will be accepted unless properly executed and filed with the Commission at Washington.

Dr. Charles Metcalf Byrnes,

For the past three years adjunct professor of anatomy and assistant in neurology at the University of Virginia, has tendered his resignation in order to accept a position as instructor in neurology at Johns Hopkins University. Dr. Byrnes will confine his practice to diseases of the nervous system.

Dr. A. A. Cannaday, of Roanoke, Va.,

Sailed for Europe on the Celtic July 3d, to be gone two months. He was accompanied by his wife.

Practice for Sale.—In a rising town and good surrounding country—assuring $2,700 to $3,000 practice—an excellent location is offered to the purchaser of my property. House fitted up with office, pharmacy, operating room and suite of rooms for private hospital work.

Address, Location, care of *Virginia Medical Semi-Monthly,* Richmond, Virginia.

Obituary Record.

Dr. James L. White

Died at his home in Farmville, Virginia, June 26, 1909, after an active practice of over half a century. Born at Abingdon, Virginia, in 1833, he received his academic education at the Virginia Military Institute, after which he studied medicine at Jefferson Medical College, receiving his M. D. degree in 1855. Dr. White entered the Confederate service at the beginning of the War between the States as Captain of an infantry company, but was afterwards transferred to the Medical Department. At the close of War, he located at Farmville, Va., where he has practiced ever since. Dr. White became a member of the Medical Society of Virginia in 1873, was a Vice-President in 1875, and was made Resident Honorary Fellow in 1906.

Chologestin should prove a useful remedy at this season, when auto-toxemia and putrefacture intestinal disorders generally are of such every-day occurrence. The formula of this preparation, with its sodium glycocholate, sodium salicylate, pancreatin, and sodium bicarbonate, would seem also to make it especially useful in cases of torpid liver. For samples and literature, write The F. H. Strong Co., 58 Warren Street, New York City.

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Original Communications.

THE INFLUENCE OF SLEEP ON ARTERIAL-SCLEROSIS.*

By W. W. BEVERIDGE, M. D., Asbury Park, N. J.

Sometime ago I read a paper before the County Society on the relation of nutrition to cardiovascular disease, and my observations since that time on this class of cases seem to strengthen my conclusion expressed at that time on the relation of sleep to the so called secondary degenerations, among which arterial-sclerosis seems one with which we are perhaps more familiar.

When I say arterial-sclerosis, I speak of it, and shall describe it as simply typical of the changes taking place with age. Thus the subject matter of this paper will be dealt with in the most general way possible. What I shall say in a descriptive way about the pathological changes or degenerative changes taking place in one organ or tissue or set of cells, I believe to hold true of the organism as a whole. I shall describe more especially the changes taking place in the vascular system, not because they are exclusively characteristic in the circulatory organs, but by reason of the general destruction of blood vessels these changes are so admirably shown. It might be easy to demonstrate a structural change in the liver tissue, but, as the damaged hepatic cell is not found elsewhere in the body, it could not be deduced that the process was a general one, so that structural changes described in the vascular system are only assumed to serve as an illustration of changes taking place in all of the tissues of the body.

With advanced age anatomical changes are noted in the entire vascular system. These changes are mostly noted in the heart and arteries though they are also seen in the capillaries and veins as well.

*Read before the New Jersey State Medical Society, at Cape May, June 23, 1909.

It is easy to understand that a heart that has been doing its work for sixty or seventy or eighty years, or even longer, cannot maintain the same integrity of structure that it had in youth. The muscular elements are pale, fatty or fibrous; the valves close with a mechanical sound, indicating a lack of tone and elasticity that is noted in a normal heart. By physical signs it may not be easy to demonstrate any organic lesion. However, it is a degenerated heart, but it is a normal heart for an individual of advanced age. At the same time a sclerotic condition usually exists in the arteries. This is a natural physiological change. It may be called physiological degeneration.

There is a similar condition with more marked structural change, and perhaps more marked structural derangement often occurring quite early in life that is not due to advanced age. It is certainly not a physiological change, but a pathological one. This class of cases is usually referred to in the literature as myocarditis, arterial-sclerosis, and perhaps might be included gout, rheumatism and the lithemic condition generally. It is to this class of degenerations that this article refers especially.

That these conditions occur much earlier in life, and very much more frequently in these days than they did a century ago; that they are noted in certain classes of individuals, especially in countries of the highest civilization and among people of the highest mental and social attainments, are facts that have been noted in all text books and medical literature. Many cases of arterial-sclerosis are recorded in individuals at the age of thirty. Chronic rheumatoid conditions are seen in early life. I have seen a well marked case of arthritis deformans in a woman twenty-three years of age. This case, by the way, gave a history of the same condition occurring in a number of her ancestors. Until recently these conditions were thought to result entirely from faulty elimination; that the waste products of metabolism

were not diverted and carried off through the proper excretory channels; that it was a catabolic failure entirely rather than a perversion of the building up process, but such an explanation of these conditions is now rejected. The true cause is not known. That it has to do in some way with nutrition is quite probable. Faulty metabolism is not a solution. It tells us nothing of the force, or forces, that operate in the living body to produce these changes.

No attempt at classification will be made, and my rehearsal of the pathology will be very brief.

Of the changes that occur in the heart, or what is commonly called myocarditis, there are different varieties. This condition is generally described as fibroid or fatty. Unquestionably, the process is practically the same. In the one case, fat is deposited or interposed for the parenchymatous cell; while in the fibroid, a change of structure takes place without the substitution of adipose tissue. The process seems to be inflammatory in some cases at least, the exudate being small new connective tissue or scar tissue, which constitute the fibroid change. The process is always preceded by arterial-sclerosis.

That this degeneration in the cardio-vascular system begins in the arteries first is suggestive of nutritional inadequacy. While the heart itself unquestionably suffers more as a result of these changes, nevertheless the condition is always secondary, and is incidental to the great work the heart has to do. The fact that at no time from early fetal life until death takes place in the individual does the heart stop its ceaseless activity, greatly emphasizes the likelihood of priority in degenerative disaster. The fact that a heart will beat continuously for eighty or ninety years, or longer, while nearly all other organs of the body have regular periols of rest, would naturally entitle it to wear out first.

A corresponding change takes place, no doubt, in every tissue of the body, but as functional disturbances in the other tissues are not so noticeable, and in most cases are detected with such difficulty they seem to elude observation. For example, a complete cessation of glandular activity in a certain organ for a long period of time may escape our notice, while under close observation, as even a slight change in arterial tension or the stoppage of an artery, however small, may readily be detected. While this is a matter of actual knowledge in the one case, by inference the facts are established in the other. There is no reason why we may not infer that the tissue of the sclerotic coat of the eye does not suffer just as much from nutritional disturbances as does the inner or median coat of an artery. As a matter of fact we know that secondary changes do take place in the sclerotic covering of the eye simultaneously with the degeneration of the arterial system, from purely physiological causes; so that the contour of the eye is changed, with the result that the angle of vision is altered. We know that the same change takes place in the muscular system, and that a man in robust health at forty or fifty years of age is not so nimble as a youth of twenty, though he may be apparently just as strong. Therefore, it is only fair to assume that a corresponding change may take place in the nutritional system itself whereby metabolism is interfered with. By nutritional system, reference is not made to any anatomical division. I do not mean simply those organs that have to do with the reception and preparation of food materials, as the stomach, the lacteals and the like; but I include all the ways and means whereby the complex process of the repair to the physiological waste takes place.

It is the experience of every physician to find cases in which sudden death occurs in an individual only past middle life, with advanced arterial sclerosis, a fibroid heart, and with evidences of poor nutrition. An illness of this kind is usually of short duration, ordinarily only a few days, accompanied by marked precordial pain, dyspnea and feeling of impending danger. While death is usually sudden and without warning, it is frequently preceded by a cessation of the discomfortable feeling, perhaps for some hours.

Such a patient will complain of premonitory symptoms, for perhaps only a few weeks or months, and will often not seek the advice of a physician till the occurrence of the neuralgic pain or the discovery is made accidentally. On examination of such a patient, the sounds of the heart seem usually very close to the ear. In the absence of endocardial involvement, the click of the valves is very sharp and well defined. The valvular element is the most pro-

nounced sound that is heard. It has often reminded me of an imaginary fancy that might be produced by an artificial heart, constructed purely for anatomical demonstration. Exactly the same sound is produced in a senile heart to a greater or less degree.

In all of these individuals the functions of the body are poorly performed; aside from the actual lesions presentable, bad nutrition is the most striking feature of the case. Even though the body seems well nourished, the muscles are small, weak and flabby.

As a process of involution arterial-sclerosis is an accompaniment of old age purely, and should be an expression or index of the wear and tear that the individual has been subjected to. In this sense, longevity is a vascular question. To a great majority of men death comes primarily or secondarily through its agency.

I will not mention the many causes enumerated in text books that enter as etiological factors in premature secondary degenerations. With these we are already familiar, but aside from the already recognized predisposing causes, the true cause still remains in much obscurity depending, no doubt, on factors yet undiscovered, which antedate the local lesions found in the vessels themselves, but the process seems to point distinctly to nutritional failure.

No problem in physiology seems more difficult to solve than the phenomena associated with the reconstruction of a cell. It is my opinion that a more thorough study of these processes would lead to positive knowledge in regard to the means of preventing early secondary change. The whole pathology seems to focus on this point.

That many steps are doubtlessly lost in tracing the nutritive elements of food materials through the final stages of metabolism is likely true. It is not necessary that food in sufficient quantity or quality be withheld, that the individual cells should suffer from faulty nutrition. Nor is it likely that an oversupply of food or materials too rich in nitrogenous elements may so bewilder the processes of repair as to lead to disastrous consequences. It is quite likely that from the quantity of food stuffs ingested, during the processes of absorption, only such materials and in such quantities as may be required for the economy are selected and retained for its use. It would seem to me at least more rational that lack of cellular nutrition is caused by a perversion in the process of appropriating nutrition to the cells than to assume a faulty or over supply. Of course, all this is problematic, there being no actual way of tracing the materials when they leave the realm of the organic for the physiological chemistry.

It is easy to trace food materials through the digestive tract. Physiologists tell us how the peptones and parapeptones are formed; how they are absorbed through the stomach and lacteals, and finally poured into the circulation through the thoracic duct, when absorption is complete. Let us consider this question a little more at length. Beginning with food material, after rehearsing our complete knowledge of digestion and absorption, we have deposited with the circulation the nutritive elements extracted from the food, modified by the processes of digestion. However, the finished product is still nutritive material. Its chemistry has been materially changed, but it is still food. There comes a time, however, when this material is no longer simply food. It is appropriated by the organism; and for the organism in some manner till it is a part of the economy itself, as though an entirely new being were created. How, then, can we assume that, however completely the digestive forces are functionating, nutrition is going on in a perfectly natural way, and the worn-out cells are actually being reconstructed? We know with what ease the digestive functions may be perverted. Is it not fair to believe that the final processes of metabolism may not be just as easily perverted, and by the same causes? What is more common in the practice of medicine than some form or other of digestive disturbance? The exhaustive study of the disturbances of the digestive organs emphasizes the importance with which the profession at large holds this subject of preparing chyle for absorption. While the appropriation of this finished product is left almost entirely in darkness, nature, undisturbed, is permitted to manage this part almost alone. This does not seem right. It is just as natural for a person to eat as it is for a child to grow. No amount of medical knowledge would ever cause a child to grow a single inch. However, an accurate knowledge of those forces that retard and interfere with nature in conducting the growth of children constitutes one of the most useful branches of medicine. If nature, unassisted, is competent to preside over the recon-

struction of a cell, she is entirely competent to have charge of the preparation of those materials necessary to replace the worn-out particles; but it is a matter of actual knowledge that careful investigation of those forces that pervert nature from conducting digestion and absorption completely, greatly benefit the human race. Does it not seem fair to assume that in the appropriation of this finished product, to the tissue, just as much interference may be caused by the individual habits and environment of the person, as there is interference in the preparation of the materials themselves? It is so in the material world. The finest finished material in the market would never produce a garment, if the tailor were interfered with in the process of its construction.

It would be just as fair to hand over to a dyspeptic the normal amount prescribed by physiologists of meat, butter, milk and bread, and say to him, "You must eat this and let nature do the rest," as to hand over to the economy the products of these materials and say, "Nature will do the rest."

Certainly this subject is not more difficult than embryology, and, judging from the great work done in that field, good results should follow its careful study.

The physiology of sleep has always been a subject of intense interest to me. That every creature of the vertebrate kingdom should necessarily lose its individuality and activity, and lapse into a state of unconsciousness, perfectly oblivious to its surroundings or a very large proportion of its natural life, seems to me most impressive.

It is also surprising to me that so little work comparatively, has been done in the study and investigation of this most common phenomenon. Some work has been done by Carpenter, Ladd and a few others, but their efforts have been directed more especially to psychological phenomena. The significance of this sleeping state as a physiological function seems never to have appealed to medical men. It does seem to be accepted by the race rather as a physiological inconvenience than an active force of very urgent character.

Sleep is, to my mind, the most important function of the living body. Just what sleep is, no one as yet has been able to say, but it has long been the impression that sleep has to do, almost entirely, if not entirely, with nutrition; that the couch on which we recline is the physiological repair shop, where the reconstruction forces of the body are active in repairing the wear and tear on the body during the day's activity. Whatever the condition is, it certainly is not rest, for however much one rests, it will not take the place of sleep, nor will it diminish the amount of sleep required, except in so far as perpetual rest diminishes tissue waste. Without sleep and with plenty of food one cannot live. With plenty of sleep and no food a person will live longer than with food and no sleep. Without sleep a person cannot even appropriate the food he has ingested for the repair of his waste tissue, while with sleep in abundance, an individual can actually consume the surplus adipose tissue he has stored up in the body as though for reserve purposes.

The amount of sleep required is always in direct proportion to the need of nutrition. Early in infancy, when growth is very rapid, when the need of appropriation of material is very great, not only for repair, which is then at its minimum, but for reconstruction of new cells, the child sleeps nearly all the time. Apparently, it awakens spontaneously at intervals and cries for food. When this is supplied it drops asleep and seemingly appropriates what it has ingested for individual needs. Yet sleep has only an incidental relation to growth. The fact that during infancy and early childhood an access of nutrition is required for the growth of the child, and a correspondingly larger amount of sleep needed at this time, while in adult life less nourishment and less sleep, and, in old age still less nutrition and proportionately less sleep is a strong factor towards the establishment of sleep as purely nutritional.

In all cases where the appropriation of a large amount of nutrition takes place, as in obesity, correspondingly larger amounts of sleep are taken. In fact, in the treatment of obesity, cutting down the hours of repose has a much more beneficial influence than restricting the diet, while restricting both sleep and diet gives the best results of all. There is no evidence that nutrition is appropriated to the cells during the wakeful hours.

Where indiviuals are so situated that sleep is impossible as soldiers on the march, or sailor at sea in a storm, an unusually long period of sleep is necessary to compensate for the long delay. Not only does this pertain to the hu-

man race but to animals as well, for all know that animals well housed and worked only during regular hours and with regular hours for sleep, require much less feeding and do better than those otherwise attended.

This theory has economic value only in so far as it can be applied to every day life. I believe that a more thorough understandng and observance of the natural phenomena attending sleep would have definite value and application to the affairs of health; that the retrogade changes incidental to old age that are ushered into middle life long before the individual should show signs of physiological death might be averted by a more careful study of the processes that apply the nutritional products direct to the cell. Whatever sleep is, I am convinced that it is the process, or presides over the processes that convert food into the organic life of a cell. The life of the organism is a cellular life. The life of the cell depends entirely on the integrity of its repair.

The class of patients who exhibit the signs of early degeneration, as a rule, are nervous individuals, either by nature, occupation, or habits of life. Generally, they are poor sleepers, or their natural slumber is very much disturbed by worriment, or environments not favorable to natural repose. The tendency of our modern life is to live at a fast rate, and to reduce to a minimum the hours of repose, thus not only subjecting the organism to unnatural strain, but depriving it of its physiological repair. Necessarily, early decline results. This is clearly shown by the class of individuals who lead a more regular life. Among the agricultural classes, who retire regularly, as a rule, and whose sleep is not disturbed by the noises of city life, long life is the rule, and marked secondary changes are less frequently seen in early life.

It is not essentially a question of quantity in point of time for sleep. Just as it is common for an individual to partake of a sufficient amount of food and still have his digestive functions so interfered with that he cannot be nourished, so might a person spend eight hours in repose, yet the functions of sleep might be perverted or interfered with by some outside influence as to fail in its ultimate result.

That nutrition is the keynote of organic life is beyond dispute. That the interference or perversion of the appropriation of the nutritive elements to the repair of the cell is caused almost entirely by the habits and environment of the individual, is so strong a conviction in my mind that I feel justified in presenting the subject in the light that it appeals to me.

I trust the Society will deal charitably with this article, and that I will not be censured for introducing theoretical matter not susceptible of proof.

SURGICAL DISEASES OF THE KIDNEY.*

By J. GARLAND SHERRILL, A. M., M. D., Louisville, Kentucky.

We have been led to the consideration of this subject because of the frequency with which lesions of the kidney are overlooked during the early stages, when much good can be done by proper surgical treatment. The symptoms during this early stage may be so vague as to escape the notice of the attendant, and often that of the patient himself. It is not our purpose to enter into a full discussion of renal disease, but rather to mention a few of the more important points which will lead to a diagnosis, and to mention briefly a few cases which have come under our observation. We have found that a most careful study of the early symptoms of renal affections has enabled us to diagnose many cases in which the symptoms seemed to be obscure. The early symptoms of tuberculosis of the kidney are especially referable to the bladder, and many a patient has been treated for long periods for cystitis when the real lesion lay in the kidney itself. Cases of stone in the kidney also present rather vague symptoms which require a very careful analysis in order to reach a conclusion, but to those familiar with such conditions, suspicion of a renal lesion is at once excited, and with care a diagnosis can be made. The diagnosis of tumors of the kidney will always require a nice diagnostic skill, but it is only the most superficial observer who will overlook a floating kidney.

The symptoms to which we call your attention are variations in the normal amount of urine excreted, especially an increase of the quantity passed with a marked increase in the frequency. The presence of pain directly over the kidney, along the course of the ureter, or over the bladder, or, perhaps reflected down the thigh; the presence of small quantities of pus, blood, crystalline elements, or necrotic tis-

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sue in the urine are all suggestive of a renal disturbance. The reaction of the urine is also of great importance. Bladder inflammatory conditions result in alkalinity of the urine, whereas lesions higher up in the urinary tract show very frequently an acid urine. While most of the cases can be correctly differentiated with proper care, many are very puzzling, and some are impossible of diagnosis, even after careful study, except upon the operating table.

The more important lesions of the kidney of interest to the surgeons are (1) peri-renal abscess; (2) suppuration in the kidney pelvis; (3) renal calculus; (4) hydronephrosis; (5) movable kidney; (6) tuberculosis, and (7) malignant disease, as sarcoma, carcinoma and hypernephroma.

In the diagnosis of these conditions a careful study of the clinical history of the patient must be made, as much valuable information may be lost by lack of care in questioning the patient. The age of the patient, the onset of the disease, the length of time it has existed, the amount and character of the discomfort produced, the size and location of any mass which is present, and the urinary findings, constitute the principal data upon which our conclusions must be based.

Peri-renal suppuration may result from the extension of renal involvment, such as calculus or suppurative kidney, or it may follow appendicitis, inflammation of the liver or gall-bladder, or disease of the vertebrae. It may also, in rare cases, occur subsequent to a traumatism. As a result of infection in the fatty capsule of the kidney, a quite perceptible tumefaction appears, the patient complains of pain and a sense of weight and heaviness in the affected region. The swollen area is indurated, and gives to the hand a sensation of heat. These patients frequently assume a rather characteristic attitude, walking with the body bent forward, the back being more or less fixed and rigid, simulating closely the attitude of Pott's disease. In recumbency these patients will lie with the thigh flexed upon the trunk. This is the result of an involuntary effort to remove pressure from the diseased structure. The constitutional symptoms are those usually noted in acute suppuration. If the kidney is not diseased the urinary findings are unimportant, but if calculus or tuberculosis of the kidney coexist, they become most valuable in arriving at a correct conclusion. To finally determine the presence of pus we must depend upon the evidence of fluctuation, the leucocyte count, and, if necessary, aspiration.

Suppurative pyelitis may result from the localization of bacteria which are in process of elimination through the kidney, or it may result from calculus, from tuberculosis, or from infection which has extended from the bladder. Ascending infection, as a rule, only occurs when there is obstruction to the urinary outflow. Gonorrhea predisposes to suppurative pyelitis, and may be the actual exciting cause. The symptoms will depend to some extent upon the presence or absence of complete obstruction of the ureter. When the ureter is patulous, pus and blood will be found in the urine, but when the ureter is completely obstructed the pus accumulates in the pelvis of the kidney, and a considerable enlargement, or mass, forms in the region of the kidney. It can be readily understood that the symptoms of suppurative pyelitis may vary according to the pathology present. It may develop with a chill and fever, great pain and tenderness, following a cystitis, and the symptoms may be so marked as to render the diagnosis comparatively easy. Again, it may appear as a pyuria and exist for a long time before being recognized. If there has been pus in the urine, and the urine suddenly becomes clear, with the development of pain in the lumbar region, the case is evidently one of suppurative pyelitis with obstruction.

The differential diagnosis between pus from the kidney and purulent cystitis may be made with fair accuracy by thoroughly washing out the bladder until the water returns clear, then after a few minutes' delay drawing off the urine which has collected. If this specimen shows pus in about the same proportion as the former one we may feel assured that we are dealing with a renal pyuria. If, on the other hand, the urine is clear we may know that the trouble is located in the bladder. Where such methods fail us cystoscopy gives us important information in that the infected bladder can be readily recognized by the eye, and purulent or clear urine can be seen discharging from the ureter. Cystoscopy, however, should be practiced under these circumstances with the greatest of care, as there is danger of increasing the inflammation in the bladder or ureter if

such exist. In order to determine the character of the urine from each kidney the method of Kelly may be followed in the female, and urine sufficient for purposes of examination may be collected by holding a speculum with an oblique end under the ureteral orifice. Or after thoroughly cleansing the bladder to free it of infective material, ureteral catheterization may be practiced. To determine whether or not the suppuration is tubercular in character repeated examinations of the urine for the tubercle bacillus should be made. These examinations are best carried out by taking one or more slides each day for several days, because of the fact that the urine may be free of bacteria for some time and then suddenly be loaded with them especially of the disease has penetrated the renal pelvis. In some instances it may be necessary to inoculate animals with the urine in order to differentiate between these two conditions.

Renal calculus may exist for a considerable time without exciting symptoms of sufficient importance to attract attention, yet, as a rule, the patient will complain of vague pains reflecting down the thigh, over the gluteal region, or across the back. These symptoms are often so vague that only a most careful observer would be liable to suspect the kidney region. The patient may complain of soreness in the kidney region with perhaps sharp exacerbations of pain, or pain may appear suddenly. At times there may be noticed the discharge of small particles of gravel in the urine. This is especially likely to occur after an exacerbation of pain. Vesicle irritation is sometimes noted, and the patient may state that the urine has contained blood. Such symptoms are of greater importance when the patient leads a sedentary life, especially if he has a gouty or rheumatic tendency, or if he is in the habit of passing a concentrated urine. Examination of the urine will show the presence of pus, blood and crystals, either oxalates, uric acid or the urates; it will usually be acid in reaction and of high specific gravity. Hematuria is not so constant as in tuberculosis of the kidney, and is more likely to be present after an attack of pain. The kidney may or may not be enlarged as a result of renal calculus. During an attack of pain the patient may suffer from urinary suppression. This may occur from the obstruction of one ureter by a stone, with spasmodic contraction of the other, or there may be a temporary cessation of the secretion of the other kidney from sympathy. A more serious form of anuria occurs when both ureters are obstructed by calculi. Hydronephrosis may occur when a stone partially or intermittingly obstructs the duct.

The diagnosis of renal calculus is to be made by the presence of a sharp, sticking pain in the kidney or ureteral region, lasting for half an hour to several hours, with more or less suppression of urine and profuse sweating; by the discovery in the urine, after such an attack of pus, blood and crystalline substance; and by the presence (in the case of hydronephrosis) of an increase in the size of the renal tumor. In the urinary examination it is important that the specimen should be the secretion directly from the suspected kidney. In examination of a kidney containing calculus, pain may be elicited by bimanual pressure suddenly made upon the organ. This is especially true if the hand in the loin strikes a rather forcible blow over the kidney.

Within recent years advances have been made in the diagnosis of renal calculus by means of the Roentgen ray. An expert in the manipulation of this form of electricity can with some accuracy detect upon the photographic plate a shadow at the site of the calculus. It is well in making this examination to take several skiagraphs at different times, lest a defect in the plate mislead the observer. By having thus a number of skiagraphs, including in the observation the ureter, it is claimed that one can note the passage of a small stone in its course from the kidney to the bladder. An observer can by careful consideration of the evidence presented by the clinical history, the urinary findings, a physical examination, and the skiagraph make a diagnosis with fair certainty.

Hydronephrosis may result from any condition which causes a partial or intermittent obstruction to the outflow of urine from the kidney pelvis. Thus it may result from congenital or acquired stricture of the ureter, from stone in the ureter, from the pressure of a pelvic tumor, especially of the malignant type, and from enlarged prostate or a tumor near the neck of the bladder. It is a condition which develops slowly with some discomfort and finally pain, which may be slight or quite severe. The tumor is usually well rounded and smooth, filling one loin, or sometimes both if the condition af-

fects both sides. Double hydronephrosis may follow extensive carcinoma uteri. The patient may have noted the passage of a diminished amount of urine for some time. When due to calculus the urine will at times have shown the presence of blood, sometimes macroscopically, more often microscopically. A sudden large discharge of urine may be noted, followed by a corresponding diminution in the size of the swelling. The general health may be somewhat affected, but not so rapidly as from malignant disease or tuberculosis.

Movable kidney causes a variety of symptoms, producing the so-called renal crises, and its detection is, as a rule, comparatively easy to the experienced observer. From torsion of the ureter the urine after one of these crises is likely to contain blood; as a rule it is free from pus or other evidence of either calculus or tuberculosis.

Pain, consisting of a more or less constant weight in the loin, with occasional attacks of acute suffering, followed by a free discharge of urine, perhaps containing a few blood cells, and accompanied by nausea, flatulence, and irregularity of the bowels, is strongly suggestive of movable kidney. A movable tumor of the kidney shape, pushing towards the umbilicus in recumbency, which can readily be pushed back into the loin, is sufficient for a diagnosis. Several examinations may be necessary before its mobility is established, and in some fat or muscular patients it may escape detection. The existence of a calculus or tuberculosis in a movable kidney will present symptoms of these conditions, and the possibility of such an occurrence must not be overlooked.

Renal tuberculosis is justly entitled to greater consideration than has hitherto been accorded the subject, and the condition may be overlooked for a long period when treatment offers most to the patient. It is claimed that the kidney is attacked in 2 per cent. of all cases suffering from tuberculosis, and while it may be true that many cases showing renal involvement are inoperable, the fact remains that in a considerable number no other lesion can be found save that in one kidney, and the majority of such cases are to be classed as distinctly operable.

Tubercular infection of the kidney commonly takes place through the circulation. Rarely, however, there may be an ascending infection from the testicles, bladder or ureter. Cases have also been recorded in which the infection could be traced to Pott's disease, or to a tuberculosis of the intestinal tract, peritoneum, etc. The onset of renal tuberculosis is usually insidious in character; exceptionally it begins with an attack of sudden pain in a patient previously healthy, simulating a renal colic.

The probable cause of this pain is an obstruction of the ureter with blood clots or cheesy material. A history of traumatism may be elicited. The patient will state that he has suffered for some time with pain or soreness in the back. In some cases vesical irritation is particularly distressing and painful and frequent micturition may be present even in the absence of demonstrable bladder involvement. Early in the disease the quantity of urine is increased above the normal and later the amount is greatly diminished. Morris claims that polyuria, in a frail patient of tuberculous family history, for which no other cause can be assigned, should excite the suspicion of renal tuberculosis. Pyuria is almost invariably present, and hematuria is frequently one of the early symptoms. The blood is usually equally diffused throughout the urine. Except when cystitis co-exists the urine is acid in reaction. Albumin is always present, and renal casts are occasionally observed. The kidney may or may not be enlarged, but the presence of perirenal inflammation is most likely to give the impression of a tumor mass. Tubercle bacilli can be demonstrated present in the urine in the majority of cases by repeated daily examinations, and their presence in connection with blood and pus, and in the absence of bladder and prostatic disease, renders the diagnosis almost certain. Absence of the bacilli from the specimen of urine is however, not positive proof that the kidney is not involved. The general symptoms are those usual in tuberculosis of any portion of the body—evening rise of temperature, loss of flesh, anorexia, pallor of the skin, night sweats, etc.

The diagnosis can be made by considering the history and general appearance of the patient; by the presence of pain in the region of the kidney, usually coming on slowly and gradually, but exceptionally closely resembling the pain of calculus; by the dysuria, polyuria, hematuria, pyuria in acid urine, and the presence of albumin. In some cases it may be possible to detect tenderness along the ureter, and when

present is a valuable indication. Demonstration of the bacilli of Koch in the urine in connection with the other symptoms mentioned, will be reasonably conclusive. As an additional precaution in diagnosis, and to determine which kidney is affected, cystoscopy and ureteral catheterization may be resorted to, although the latter procedure is not entirely free from risk.

In microscopical search for the tubercle bacillus in the urine great care must be observed not to confuse this organism with the smegma bacillus. Recent investigations by Young and Churchman have shown that smegma bacilli are surface organisms, and that it is easily possible by a process of retrograde irrigation to completely wash them from the surface of the urethra. Careful sterilization of the external parts is, of course, essential before the irrigation is commenced. When these measures are correctly carried out the ordinary staining methods may be employed for the detection of tubercle bacilli.

A patient suffering from malignant disease of the kidney will usually present the history of a tumor increasing in size somewhat rapidly, and causing a sense of discomfort and heaviness rather than acute pain in the renal region, accompanied perhaps by some blood in the urine. Pus is not to be expected in the urine in the absence of complications. A careful physical examination will, as a rule, make it possible to determine the seat of the origin of such a growth, if the observer constantly keeps in mind the conditions which are likely to mislead him. Morris says (p. 586. Vol. I.) that when a swelling, which begins on one side of the abdomen and in the renal region of a patient, either below the age of five or over that of forty years, attains rapidly a very large size, its malignancy may be diagnosed with fair certainty.

Malignant disease will in a short time make its impression upon the general health of the patient, and the characteristic cachexia will sooner or later develop. These points, taken in connection with the clinical history, and by the exclusion of other conditions, especially enlargement of the spleen, will usually enable us to arive at a correct diagnosis.

Our experience includes 21 cases, 17 of which came to operation, while 4, for various reasons were not operated upon. All of the latter were cases of tuberculosis of the kidney; one of these patients died as a result of the disease within two months after she refused operation, having in the meantime passed from our observation. In the second case both kidneys were affected with tuberculosis and a change of climate with usual treatment for tuberculosis was advised, with result that patient is still alive. The other two cases showed a unilateral tuberculosis of a mild type and both of these cases are still living, one fifteen years after his first symptoms appeared.

Of the operations done three (3) were nephrotomies, six (6) were nephropexies, and eight (8) nephrectomies.

The nephrotomies were done, one for partial tuberculosis of the kidney, in which we hoped to preserve the remainder of the organ, but in this we were unsuccessful and another operator, a year or so later removed the gland. The second nephrotomy was made for suppurative pyelitis with marked pyonephrosis, the result of a mixed staphylococci and gonnococci infection. This operation failed to relieve the condition and the patient became septic, so that it was necessary to remove the kidney by a nephrectomy. The third nephrotomy was done for a persistent hemorrhage due to renal varix, the exact diagnosis not having been made before operation.

Of the nephropexies one was later subjected to nephrectomy for very persistent nephralgia; and in one there was a recurrence of the mobility, which we believed to be due to the method of operation. In this latter case the kidney was held in place by gauze suture beneath either pole. The result immediately following operation was apparently good, but within a year the kidney has again become quite mobile.

Of the eight (8) nephrectomies three were performed for tuberculosis of the kidney, one for traumatism, one for a marked hydronephrosis with ureteral calculi impacted in the ureter; one due to renal stone, which was misplaced and fixed; one for persistent nephralgia following nephropexy, and one for pyonephrosis, nephrotomy having failed to cure.

These operations were without mortality, and the final outcome in every case save one was a recovery and in this case, a nephrotomy, there was a persistence of the tuberculosis, demanding subsequent nephrectomy by another operator.

SURGERY OF THE PERIPHERAL NERVES.*

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Successful surgery of the peripheral nerves is dependent upon absolute asepsis, accurate suturing, and last, but not least, upon anatomical and physiological knowledge of the parts involved. The regeneration of the nerves is a question that has not been definitely settled. Two theories seem to have about equal support, for sometimes victory rests upon the banner of the advocates of the continuous theory of regeneration, and, again, the forces advancing the discontinuous theory are apparently triumphant.

Before taking up the technic of nerve suture we will briefly review these two methods of regeneration. It is impossible for both of them to be correct, and the matter is simply a question of interpretation of the various facts that have been observed. According to the continuous, or Wallerian theory, regeneration of the axis cylinder occurs only from the central stump of an injured nerve; while according to the discontinuous theory, the axis cylinder may be regenerated from the distal portion of the nerve. Of course, no function can be established until there is direct connection with the central stump. According to the continuous theory, the myelin sheath is reproduced from the neurilemma cells in segments that eventually unite, forming a tunnel through which the regenerating axis cylinder shoves its way from the central stump.

The advocates of the discontinuous theory allow that the myelin sheath and the neurilemma form in sections; but they claim that the axis cylinder is also formed in sections similar to those of the myelin sheath, and that the regenerated nerve results from a coupling together of all these segments and the union of these to the central stump. Schotte, after an exhaustive review of the literature, concludes that central connection is not necessary for regeneration in a peripheral nerve, though such a connection must be made eventually in order to maintain the nerve in a healthy condition.

On the other hand, R. G. Harrison, of Baltimore (*Journal A. M. A.*, Vol 46, p 1009.) has performed a series of experiments in the embryos of frogs which are exceedingly interesting. By cutting away a thin section on the back of the embryos, he succeeded in having nerves to grow to the abdominal muscles, which were purely motor. These nerve fibres consisted solely of axis cylinders and were without sheath or neurilemma cells. Afterwards, he succeeded in removing the anterior portion of the neural tube and found the nerves that grew to the abdominal muscle were purely sensory and were covered with the nerve sheath and with neurilemma cells. This seems to show that so far as embryonic development is concerned, the motor nerve fibres grow continuously from the cord without the aid of the sheath or the neurilemma cells.

A peculiar and unexplained fact about the regeneration of nerves is that if a peripheral nerve is cut in two places, the distal portion degenerates, but the segment between the cuts though entirely severed from both the peripheral nerve ending and the cord, apparently does not degenerate to any marked extent. This is of service in operations upon a nerve where there may have been multiple injuries at different points along its course.

Nervous tissue follows the biological law that a simple tissue is repaired more readily and more nearly perfectly than a complex tissue. Consequently we find that a simple and hardy tissue, like tendon or bone, is easily repaired, whereas a more complicated and delicate tissue, like muscle fibre and nerve tissue, regenerates with much more difficulty and then repair is often very imperfect. As the structure of a nerve is complex, we naturally find that it not only takes the most favorable conditions in order to secure repair of such tissue, but even under these circumstances a long period of time is required before perfect function is fully restored. It is a well known fact that some nerves repair more easily than others. The fifth nerve, which carries solely sensation of touch, pain and temperature, repairs with great ease. In fact, the difficulty in surgery of this nerve is to prevent repair. On the other hand, the seventh nerve, which is purely motor, is exceedingly easy to injure and regenerates slowly.

Even in the mixed spinal nerves there seems to be some difference in the ease with which various nerves are united. According to Bowlby,

*Read before the Richmond Academy of Medicine and Surgery, June 22, 1909.

better results are obtained after suturing the peroneal or the musculospiral nerves than after suturing the median or the ulnar. The character of injury and the age and general condition of the patient have a great deal to do with the process of repair. Suture of a nerve in a young individual who is muscular and of good constitution will be much more likely to result successfully than suture of the same lesion in a middle aged man of weak constitution and sedentary habits. In other words, the more nearly the patient approaches the condition of a young and healthy animal the more saticfactory is the result likely to be. This is more marked in the case of nervous tissue than with any other structure. A nerve will repair more readily after an incised wound than after a crush or laceration. Suppuration adds to the difficulties of repair, for obvious reasons.

Murphy of Chicago, has reviewed the work done upon surgery of the nerves in several excellent articles, and claims that the power of regeneration depends upon the presence of a neurilemma and neurilemma cells. Apparently clinical facts seem to substantiate this observation. For instance, the optic nerve which has no neurilemma cells but an abundant myelin sheath, is incapable of the slightest regeneration, whereas the sympathetic nerves with neurilemma and neurilemma cells, though without a myelin sheath, regenerate readily. Nerves containing myelin sheath and neurilemma with neurilemma cells invariably have some power of regeneration, though they vary in degree according to different conditions discussed above.

As for the operation, it consists in maintaining so far as possible, absolute asepsis, in making a clean dissection with a knife, in cutting across the nerve ends with a sharp knife, and in approximating them without tension. The dissection should be as nearly bloodless as possible so as to keep the field unstained in order to identify promptly the various anatomical structures. The nerve should be handled gently; and if the ends have become bound together by scar tissue, the nerve trunk should be dissected out with a sharp knife for some distance on each side of the injury before section of the injured portion. It is important that there shall be no tension when the nerve ends are brought together. The injured portion of the nerve may be grasped with forceps to steady the nerve trunk, but the healthy portion must be handled with the fingers to avoid bruising its fibres. After the diseased portion has been excised with a sharp knife, sutures should be inserted to approximate the ends.

The first and most important suture should be placed squarely through the center of the nerve about one-sixth inch from its end. This should be carried in a similar manner through the other end of the nerve and the suture tied, gradually approximating the two nerve ends.. It is well to hold the first loop of the knot with the forceps while tying the second so as to maintain the exact tension that was placed on the first loop. In a very large nerve, such as the sciatic, it would be well to place two or three such sutures at intervals, but in a nerve of the average size, one is usually enough, and more than that is likely to displace the true center of the nerve and so make approximation of the nerve fibers more inaccurate. After this suture has been tied, one or more may be placed on each edge, going through the sheath of the nerve. Sometimes, these hold better by inserting them after the manner of mattress sutures. I use a fine Hagedorn needle or a fine, curved intestinal needle. If the former is used, it is inserted so that the cutting point is in a plane parallel with the nerve fibers. This prevents injury to the fibers. Fine chromic catgut that is timed to resist absorption from ten to twenty days, is the material employed. After the nerve has been sutured, a flap of fascia or muscle should be formed from neighboring structures and stitched over the line of union. This is highly recommended by Murphy to prevent cicatricial contraction pressing upon the nerve. If the injury is in an extremity, the limb should be placed at rest in a splint or some retentive apparatus that will retain the limb in such a position as will relieve tension on the nerve. Unless entirely necessary, it is much better to dispense with drainage in these cases.

In three cases, I have sutured the brachial plexus or some of its terminal branches at their origin. In one of these cases, which has been shown at this Academy, there was an injury of the median nerve which included its tow head of origin. This nerve was grafted into the ulnar, which was normal. The patient made a satisfactory recovery and within a few months could flex all of the fingers; and within two years, he could use it satisfactorily in his employment as a farm hand. In one other case, the plexus had been crushed by the clavicle being forced against the first rib, catching the

plexus betweew these bones. Two years afterwards, the patient came to me with a complete paralysis of the muscles of the hand and forearm and partial paralysis of the muscles of the arm. The musculo-cutaneous had apparently partly escaped injury as there was some motion in the biceps. The cords of the plexus were drawn together by a cicatricial contraction following the trauma; so the injured portion was excised and the stumps of the plexus where the nerve fibers were apparently healthy but still bound together by some scar tissue, were sutured with chromic catgut. The patient improved somewhat for the first year. Sensation extended to a little below the elbow and there was slight extension of the forearm during the second year. No further improvement occurred, however, and another operation was done along the same lines as the first, excising more nerve tissue. Six months afterwards, there was little, if any, improvement, and the patient wrote me that he had contracted syphilis and expected to go West. He was thoroughly discouraged and nothing further has been heard from him.

In another case, the injured ulna was grafted into the inner cord of the plexus. There had been extensive suppuration and much destruction of tissues. So far there has been but slight improvement. The operation was done eighteen months ago.

In a case of complete severance of the musculo-spiral by a steel fragment from a hammer, suturing was done two days after injury. The patient had the usual symptoms of complete paralysis of the musculo-spiral at the time of injury, but within two months function was entirely restored. In several other cases, suturing of the ulna, the median, the radial or the internal cutaneous nerves has been done, but the patients have either been lost track of, or the injury too recent to give a report.

A suture of the recurrent laryngeal which was injured by a bullet, was done about eight months ago. A few fibers of the nerve appeared to be intact, though a laryngoscopic examination by Dr. C. M. Miller showed that the paralysis was apparently complete. The nerve was exposed by an incision along the anterior border of the sterno-mastoid. The large vessels were drawn to the outer side, the trachea, larnyx and thyroid gland were tracted toward the middle line, and in this way the recurrent laryngeal was exposed. Most of its substance was replaced by scar tissue which fixed the nerve to the surrounding structure. The diseased portion was carefully dissected away, leaving a few fibers apparently healthy. One fine suture of chromic cat-gut was used to approximate the freshened portions of the nerve. The wound healed primarily, and the patient's voice gradually improved. About six months afterwards, she could speak above a whisper, and an examination by Dr. Miller at that time, showed marked improvement in the paralyzed muscles. We have reason to hope that a complete cure will result.

303 *Grace Street West.*

FRIGIDITY FROM THE SOCIOLOGICAL AND GYNECOLOGICAL VIEWPOINT.*

By C. M. STRONG, M. D., Charlotte, N. C.,
Professor of Gynecology in North Carolina Medical College, Surgeon to Charlotte Hospital.

The gynecologist and sociologist must work together to solve many of the questions of life. The lawmaker and statesman cannot correct the basic faults of society. The frequency of divorce, domestic infelicity and social evils, I am persuaded, can be greatly lessened by the competent gynecologist. There must be and is a physical cause for a great many social evils, especially in the married, and one of the greatest causes is frigidity—in the female—and the most frequent causes of the frigidity are physical defects and pathological processes. I shall attempt in this short paper to give the results of my experience along this line.

I am aware that I am treading on dangerous ground, but hope to touch it only in a scientific and medical way. How often have I been consulted as a gynecologist for this one symptom of frigidity, and have been told it was the cause of estrangement, infidelity and divorce. I cannot tell, and I am sure such is the experience here. We cannot dismiss this question; it is the physician's burden; we must look it square in the face and act. We must lay aside false modesty and prudery, so characteristic of our age, and handle it in the ancient biblical way, not exalting Venus in a Bacchanalian revelry, and on the other hand, Pharisaical, pass on the other side with a "holier than thou demeanor."

A true biblical axiom is, "All things are pure to the pure." From this standpoint the physician can handle social questions, and in many cases remedy them.

*Read before Medical Society of State of North Carolina, at Asheville, June 17, 1909.

The basic principle of our social life is love, and love has several forms: active and passive, *i. e.,* Every human being has these forms. Among the active forms we have the errotic and libidinous; and of the passive, we have complacency, love of beautiful, esthetics, etc.

The combination of the active and passive forms is necessary for social existence. The active ungoverned becomes lascivious and beastial. The passive alone gives us the lazy, slothful dreamer. The active form brings out the progressive. The passive the retrogressive. The active form brings about the mating of sexes. The passive cements and beautifies the union. Many unions have only the first, which is a species of licensed lust, while passive union cannot create the lust. The first is a creative function, given by the divine Creator for the purpose of propagation; and to make it what it should be, both sexes must exercise the active love. We, as physicians, should decry the prevalent idea, that it is coarse and vulgar for the female to exercise her active love; it should be her pride—God-given and legal—because this is so essential to perfect harmony of marital life.

The sexual act, as some text books on diseases of women would lead us to suppose, in woman, is mostly passive, is not true; and where it is true, is a great misfortune; and in many cases pathological, thus remediable. The copulative act is mental, spinal and local. When it is mental we can by a heart-to-heart talk with them, explaining the duty they owe their mate, and also that they can cultivate the faculty, has in my hands, effected good results.

Second class of interfered spinal reflexes we cannot hope to do much for.

Third, The local function of copulation is largely a voluntary act, and is performed successfully to both parties only when all the parts act in unison, and herein lies our ability to help. Starting from without inward, let us enumerate the physiological function of each organ; then we can understand how best to restore this harmonious function.

First, the labiæ are the gateway, and must have their secretive action intact; this is mainly due to the vulvo-vaginal gland; hence, any diseases affecting this must be cured, abscess and cyst must be early healed, as also eczema, etc.

The muscular arrangement must act also in unison; the vaginal sphincter has attachment with the sphincter ani, which is attached to the levator ani and transverse perinei, which are partly voluntary, and their action is necessary for the organism; hence any tear of these muscles must inhibit successful mutual coition; and here let us remember, the mucous membrane may be intact, yet tears and separation may be present. The successful repair of these parts has brought back, in my experience, domestic felicity in many cases. The clitoris, the seat of primary voluptuous sensation must be looked after. I have found the adherent prepuce in women who have borne children.

Vaginismus, that peculiar nervous phenomenon, should be looked into and remedied in many cases of domestic unhappiness, many cases requiring operation. The vagina, aside from atresia and demonstrable defects is, we know, not subject to many diseases, and is not an active force in coition. The cervix is the seat of orgasm in the female. This is brought about by the action of the perineal muscles forcing friction upon the clitoris and the cervix directly and reflexly, which throws the uterine ligament into action, depressing and dilating the sphincter uteri, producing suction until finally the plug of mucus in the cervix is expelled, and the climax orgasm is produced. Now, we can see how diseases of the cervix and pelvis may interfere with the act. Practically, I find orgasm infrequent in lacerated cervices, also malignant and other gross pathological processes. Pelvic lesion, binding and inhibiting the motility of the uterus will do the same thing; while diseases of the uterus, viz., endometritis and small tumors do not do so. The question here might be raised, What about women who have had ablative operation? And would answer, Women who have experienced libido sexualis have developed the mental sensations and fairly well perform their duty; at the same time, not so much is expected of them, and this class is not included in the gynecological domain to remedy.

It might be well here to recite a few illustrative cases:

Mrs. H., age twenty-two, married two and a half years; one child, one year old; was unceremoniously left by her husband six months prior to consultation; admitted that she supposed the cause of his leaving to be her aversion to conjugal relation, which was, prior to her childbirth, perfectly normal. She had

other marked symptoms of gyneic disease; examination revealed perineal cervical laceration, adherent, retroflexion, for which an operation was successfully performed, restoring her former sexuality. Her husband has returned, and the home made happy. In this case anyone has a contempt for the extreme cowardly action of the husband, but it shows how the surgeon can restore the home.

Mrs. P., age twenty-six, mother of two children, consulted me for what she termed the loss of her husband's active love. Being a different grade of man, he had accepted the inevitable, but life was robbed of one of its pleasures, both confessing, and she deploring the loss of libidinous pleasure. On examination she had laceration of perineum and cervix. Restoration of the lesion and heart-to-heart talk brought back the old pleasure, and took the crow feet from the husband's rapidly seniling face.

Mrs. R. lived happily with her husband until after a severe accident—thrown from a buggy five years ago—since which time coition was very painful, and became a nightmare until the mind became affected; the husband was also made. Examination revealed an enlarged misplaced adherent ovary in the cul-de-sac of Douglass; patient recovered, and as soon as convalescence was established the clouds blew over, and mental and moral calm and happiness reigned supreme.

Mr. G., after two months' marriage, consulted me, saying he and his wife had mutually decided to separate because, after his first approach, his wife positively refused him. After explaining to him and to her the necessity of thorough examination she was anesthetized. Vaginismus, due to organized and painful carunculæ myrtiformes was found, dissected out and everything was well. Not long since, he confessed I did the work too well, as she had two children within seventeen months. Many other cases can be cited, but these will suffice. Even in my limited experience rarely does a month go by but I am confronted by this medico-moral question.

Dr. Howard Kelly says it is his "Life's work to cure the body (physical), moral (society), mental (physic), spiritual (Messiachly)."

Dr. Royster: "Many cases of domestic infelicity are attributed to diseased processes, and are remedial."

Dr. Mecklenburg Polk: "Many of the social evils are medical questions to be solved by the tactful, skilled surgeon."

Dr. Wyeth: "The domain of the surgeon reaches out into the broad realms of social, legal and economic questions:

Conclusions.

It is the duty of the physician to encourage domestic felicity. The physician is the only one who can discuss these social problems with women.

He can impress upon wives the necessity of cultivating the active function of love, which is so essential to conjugal peace. He can combat the prudery and falsity of frigidity, as an emblem of chastity. He should examine into the causes of frigidity, which are largely local defects and diseases.

By curing diseases and repairing impaired parts, he can restore the active functions of love, and incidently discover early diseases which are curable; yet, later, cause death.

He must look beyond restoring the continuity and contiguity of flesh—to dissecting out the moral scars, coapting wounded feelings—ligating severed cords of love, binding up broken hearts, apply the oil of joy for the spirit of heaviness, anoint with the balm of Gilead the sin-sick soul.

DEAD FOETUS SEVEN MONTHS; COMPLETE PLACENTA PREVIA ASSOCIATED WITH ROUND WORMS.*

By J. W. McGEHEE, M. D., Reidsville, N. C.

The case I wish to report has many interesting points as to etiology, symptomatology, diagnosis, prognosis and treatment.

History; Mrs. G., age thirty-seven, married at the age of twenty. She has five living children, each labor being natural and normal. Mother's age at the birth of these children was twenty-one, twenty-three, twenty-four, twenty-six and twenty-eight. The sixth child was born when mother was thirty years of age; normal labor, but child died on the fifth day afterwards with jaundice. At the age of thirty-one years she gave birth to a seven months' dead hydro-cephlic fœtus. At and prior to birth of child, her face, hands and feet were swollen, and following the death of the fœtus, her general health declined, and she had leucorrhea and other symptoms of endometritis. At the age of thirty-two she gave birth to a

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dead seven months' fœtus. Twelve hours prior to labor she had a profuse hemorrhage, and one month after labor, had a free discharge of blood. She was very much swollen prior to labor, and afterwards continued to have leucorrhea and other symptoms of endometritis, and her general health declined. At this time she consulted Dr. W. A. Johnson, of Monroeton, and improved under rest, hot douches and tonic treatment.

Five years later, at the age of thirty-seven, she became pregnant; although her general health was not good, she was able to attend to her household duties until the seventh month of pregnancy, at which time she had a slight and often repeated uterine hemorrhage; was blue and depressed, and breast was soft and flabby. About the tenth day after the first hemorrhage she had a rather profuse hemorrhage, and I called in Dr. Johnson. He at once made a diagnosis of dead fœtus, and phoned me, stating the case as above. I advised him to wait a few days, and see if the uterus would not empty itself naturally, and at the same time watch her, and if she had any profuse hemorrhage or developed any fever to let me know at once.

I might say just here, that in the two previous premature labors there was not any effort on the part of nature to empty the uterus, and it was necessary to assist nature.

Three days after phoning me, he again called me at an early hour in the morning to come at once, as Mrs. G. was bleeding freely. I went at once, and on arrival made inquiry into previous and present history, and found breast soft and flabby; woman depressed and blue, and no fœtal movements past ten days, and I was unable to hear fœtal heart; so decided that fœtus was dead, and prepared to deliver her. Dr. Johnson, with the assistance of two women placed her in position and administered the chloroform while I scrubbed my hands and prepared patient for delivery.

I only had a dish pan for my instruments and a small pan for my hands and patient. Patient anesthetized, I introduced my finger into the vagina and found the cervix soft and dilated, and about the size of a silver dollar. Then I introduced my finger into the cervix and found I had a central placenta previa to contend with. I at once told Dr. Johnson and her sisters what I had found, and stated that I did not know what would be the result, as it was a dangerous condition. I dilated cervix with my hand, and went through placenta and did an internal podalic version, and rapidly extracted fœtus. The placenta was easily removed, and the loss of blood was very little, considering her condition. Patient soon came from under the influence of chloroform and seemed to be doing nicely when I left. This was my first and only visit, as I left her in charge of Dr. Johnson. He frequently phoned me in regard to her condition.

For the first nine days after labor she ran a temperature course of from 99 to 100.5 degrees Fahreinheit. I advised Dr. Johnson to give her a thirtieth of a grain of strychnine before meals, and iron and arsenic after meals; also to give her a vaginal carbolic douche twice a day, as I feared she had a slight infection. From the ninth to fifteenth day her temperature was normal. During the first fifteen days the discharge seemed to be normal in every way, but she complained of slight soreness and tenderness over abdomen and pain in the right hypochondriac region. One the sixteenth day following labor temperature went up to 104 degrees, pulse 110, and she passed a roll of round worms from her rectum. After this, she was given calomel and santonin, followed by castor oil and turpentine, but she passed no more worms, and her temperature gradually came down.

The last report I had from her was in March of 1909. At this time she was able to attend to her household duties, but continued to have leucorrhea streaked with blood. She complained of being weak; was anemic and looked tired and worn. I advised curettement and repair of old cervical and perineal tears.

In looking into the causes of placenta previa, I find the most frequent ones to be endometritis, frequent and multiple pregnancy and nephritis. All of these were prominent symptoms in this case.

THE RESPONSE FROM READERS.*

By WILLIAM F. WAUGH, M. D., Chicago, Ill.,
Editorial Cabinet of American Journal of Clinical Medicine, etc.

One of the most difficult tasks of the medical journalist—next to paying his bills and yet

*Delivered before the American Association of Medical Editors, at Atlantic City, June 7, 1909.

holding up enough currency to enable him to attend the meeting of the American Medical Editors' Association—is eliciting such a response from the readers as may enable him to judge of his own work.

From some few we have responses a-plenty. The kicker is always with us; the man who thinks he has something to say but hasn't, and is disgruntled that we do not print his stuff; the wrathful party who stops his subscription for reasons—and more frequently for suppositious reasons—sundry and manifold, are represented with discouraging frequency in the letterbox.

It is scarcely credible how many men will make personal application of items not directed at them or at anybody in particular. I once quoted an item concerning a man who had lived seven months without a stomach; and added the comment—"That's nothing! I know lots of men who are living without bowels, and some of them owe this journal for subscription." The item was purely impersonal, and I really labored under the delusion that it was a joke, but forty-seven doctors promptly forwarded their delinquent subscriptions, and every last one of them accompanied the remittance with a furious letter, lambasting me for having thus publicly roasted him.

I have been ever since trying to think of another similar item, but somehow my clever ideas do not seem to be intentional.

But apart from these undesirable correspondents, the vast mass of our readers seem to be deaf, dumb and blind. They may possibly appreciate the scintillations of coruscating wit that burn holes in our pages, and sometimes dislocate letters, words and even entire lines—which we naturally blame on the printer; but so far as any direct means of judging go, we are preaching to dead walls.

The only means we have of judging the effects of our work is the subscription list. Unfortunately this is an afterthought, an autopsy rather than a prognosis; and recalls the nurse's estimation of the baby's bath; "if it turns baby blue it is too cold; if red it's too hot." The best we can do is to guess what will please our readers, and on our guessing ability depends our success.

Two efforts at getting in touch with readers have attracted my attention. *The New York Medical Journal* has a series of prize essays on practical topics. *The Medical Standard* has a Round the Table where contributors may air their views. The two represent radically different methods. Dr. Foster selects the essays he approves, rejecting the others; and as he rejected my own solitary contribution I consider his judgment very bad. But good or bad, it represents Foster and his personal views; whereas Atkinson throws open the lists for any and all comers to break a lance. The preference of each man will accord with his liking for centric domination, or for democratic equality of right and privilege; for orthodoxy or for free speech.

A study of the situation for many years has convinced me that the reader is primarily and entirely concerned in himself; and what interests him most are his own interests. The editor who stands nearest the average doctor will reach the average doctor. The journal that gives most real aid to the practician is the journal he most willingly buys.

The tendency with the editor is always to grow out of his class and away from it, up toward those lonely heights whereon sojourn the chosen few who never read anything so evanescent as periodic literature. We get tired of everyday, common things, and ourselves relish the new, the unusual; so that in time our ideal becomes the case that never was heard of before and never will be again. But the man who is struggling with interesting patients with acute fevers, and good paying ones with chronic ailments, who must be kept alive and on the pay list, hasn't time to bother with museum curios.

Some years ago I undertook to improve the journal; I carefully excluded all but strictly scientific papers by high-up men, cultivated the abstruse, suppressed every trace of commercialism, elided those crudities that are known as slang(which indicate the need for new forms of expression by a development so vigorous that it outgrows its clothes before they are worn out) and in every way "improved" the journal and raised its standard. Compliments came in freely—but the subscriptions fell off.

I took a vacation; and the tripod was mounted by a vigorous personality, a man who thought straight and talked slang, who wrote and printed very commonplace matter about everyday things, by plain everyday doctors, and who let in commercialism by the hogshead. I groaned over every copy, and returned to find the subscription list booming frightfully.

I thought the matter over, and the result is here—the subscriber is mainly interested in himself, and wants first and last what he can use in his own business. And while he may talk little and write less, he has eyes to see, ears that hear and a thinker that keeps on thinking; yes, and he does his own thinking with far less influence from us "leaders of medical thought" than we like to admit.

Proceedings of Societies, Etc.

NORTHWESTERN MEDICAL SOCIETY OF PHILADELPHIA.

Regular meeting held May 3, 1909. The President, Dr. Clarence P. Franklin in the chair. Mrs. M. C. Repp, Reporter.

Quinine Inhalations in Pertussis With a Consideration of Other Petrox Medicaments.

Dr. H. C. Masland: I have used the following by inhalation from a nebulizer in whooping-cough with very gratifying results: Potassium hydrate 29.6 grams, alcohol enough to make 200 c. c.; 5 c. c. of this is added to oleic acid 10 c. c. and liquid petrolatum 20 c. c., and in this latter solution is dissolved 30 grains of quinine. This preparation is inhaled three times a day from a nebulizer.

A Case of Diffuse Chronic Suppuration of the Hand.

Dr. John Leedom: The infection in this case was introduced through a small wound in the thumb. The patient neglected it until the hand became swollen and painful, then applied to a hospital, where he was treated for four or five months. When I saw the case the infection had undermined the tendons on the back of the hand, and extended around to the front of the wrist. After three months' treatment by irrigation with bromine 6 per cent. solution, iodine a drachm of the tincture to the pint, collargolum, neither of which seemed to be of much benefit, and ending by applications of silver iodide and vaccine therapy, the patient has almost entirely recovered.

Infection Following Abortion.

Dr. Charles S. Barnes: The prognosis in cases of incomplete abortion must always be guarded, as it is impossible to tell the degree of infection. All cases should be treated by immediate, complete evacuation of the uterus. If complete decomposition has not yet occurred, free curettage should be done, but, if such putrefaction has taken place, the curettage should be very gentle, and performed with a dull curette. As a rule, the uterine contents can be removed with the fingers under general anesthesia, one hand pressing upon the fundus; the uterine cavity should be irrigated with several quarts of normal salt solution and packed with iodoform gauze.

Gangrenous Perirectal Cellulitis—With Report of a Case.

Dr. C. F. Martin: An alcoholic male, aged thirty-seven, after two weeks of fever, chills, sweat and vomiting, was admitted to the hospital, where he was found to be suffering from an inflammatory lesion in the left ischio-rectal fossa. On incision there was very little discharge, but the fossa was filled with necrotic tissue and there was an opening into the rectum above the internal sphincter. The sphincters were both involved in the necrosis. After a profoundly septic course, during which the patient nearly died, he began to improve about a month after the operation and a month later was discharged from the hospital. He has since been treated at the dispensary, and it appears as if he will entirely recover. In spite of extensive loss of muscular tissue, he has considerable control of evacuations.

Report of an Interesting Case of Nephritic Colic With Operation.

Dr. Hugh P. McAniff: A female, aged twenty years, had the first attack of renal colic one year ago, and has had six different attacks subsequently. Each attack was more severe than the previous ones, the temperature normal, pulse 80 to 90, pain always confined to the left kidney and radiating down the ureter. Decapsulation, with puncture of the kidney, and exploration of the ureter as far as the bladder, was done by Dr. Schell, but no calculus found. X-ray by Dr. Pfahler showed no stone in the genito-urinary tract. Cystoscopic examination was refused. The patient made an uneventful recovery.

Discussion.

Dr. J. T. Schell: I made a careful pelvic examination prior to examination, but could

find nothing of any moment. At the operation there was great difficulty in exposing the kidney and tearing it loose from its fatty capsule. It was somewhat enlarged and congested. The urine is now normal and contains neither pus nor blood.

A Criticism of the Usual Surgical Treatment of Varicocele of the Broad Ligament.

Dr. S. E. Tracy: This condition can be cured by the ligation of the veins in the broad ligament. The radical operation, that is, the removal of the tube and ovary, as performed by many surgeons, is not justifiable. No surgeon would do castration for varicocele of the spermatic cord, or amputation for the varicose veins in the legs, and the same conservatism should be practiced in dealing with varicocele of the broad ligament.

Report of a Case of Carbolic Acid and Turpentine Poisoning.

Dr. H. A. Duncan: I was called to see a man, who was unconscious, pallid, had a cold, clammy skin, slow, shallow respiration, weak rapid pulse and all other signs of profound shock. His lips and mouth were burned, and there was a marked odor of carbolic acid and oil of turpentine. His wife stated that he had been drinking for a week, and that he had just drunk the contents of a can containing about eight ounces of equal parts of pure carbolic acid and oil of turpentine. I washed out the stomach two or three times with plain water and, before the tube was withdrawn, introduced four ounces of 95 per cent. alcohol. Strychnine, atropin and whiskey were given hypodermically, and at the end of two hours the man could be aroused with some difficulty. His recovery was complete though his throat gave him trouble for several weeks.

Discussion.

Dr. J. T. Schell: Was there a black color to the urine? Or was the odor of violets in it?

Dr. Duncan: There was evidence of carbolic acid, but not of turpentine.

Dr. Masland: Some years ago I read that in treating such a patient you should first put pure alcohol in the stomach and later clean out the stomach with water. I have not had a case of carbolic acid poisoning, so cannot speak from personal experience.

Dr. J. H. McKee: Howard Kelly, in some of his researches, found that it was a French chemist who discovered that alcohol would prevent carbolic acid burns.

Report (1) of a Case of Syphilis of the Larynx Previously Treated as Tubercular and (2) a Case of Pain in Both Knees the Result of Eye Strain.

Dr. J. Wesley Anders: A married woman, aged thirty-five, mother of an apparently healthy child of twelve years, had been treated for a long time for supposed tuberculosis of the larynx. When she consulted me, I found an ulcer on the arytenoid cartilage near the insertion of the vocal cords. The patient denied syphilis, but admitted that her husband had had a disease years ago, the nature of which she did not know. I applied twenty per cent. solution of nitrate of silver, four or five times, and gave mixed treatment, as the result of which the ulcer promptly healed.

A girl, fifteen years old, had for six months, headaches, palpitation of the heart, constipation, persistent pains in the knees increasing on exertion, scanty menstruation and other symptoms of anemia. Iron, arsenic and strychnia with aloin were prescribed, and she was advised to have glasses fitted and report after she had worn them a week. At the end of this time her headaches were much improved, her languor had disappeared, and the pains in the knees were absent for the first time in six months.

Discussion.

Dr. Fitzpatrick: Were there any other stigmata of hysteria in this case?

Dr. Anders: The patient complained of nothing more than weakness and characteristic anemia. I looked on the pain in the knees as being neurotic, and not due in any way to her eyes. It disappeared when she had glasses.

A Report of Two Atypical Ectopics.

Dr. J. T. Schell: A woman, aged thirty-seven, was sent to the hospital for the removal of uterine fibroids. The cervix was dilated enough to admit two fingers, which revealed a projection into the uterine cavity of apparently a submucous fibroid. Another large mass was attached to the uterine mass and extended above the pelvic brim. The condition was diagnosed as submucous and subperitoneal fibroid. At operation a large amount of blood, partly clotted, was found in the abdomen, and the in-

trauterine mass was fixed in the pelvis and adherent on all sides. The subperitoneal fibroid was on the left side, and on the right was a sausage shaped mass adherent to the broad ligament and reaching up to the lower edge of the liver, to which it was adherent. This mass was found to contain a large ectopic sac with a fœtus 3 1-2 inches long, the placenta being attached to the parietal peritoneum, above the brim of the pelvis. This sac, together with two fibroids, was removed and the patient made a slow, but tedious recovery.

A woman, aged twenty-three, who had had two former pregnancies within two and a half years of the present illness, had her last period on January 20th of this year, and on March 5th complained of morning vomiting, headache, dimness of vision, great weakness, œdema and albuminous urine. On March 24th, when seen by me, she was in a semi-comatose state. Bimanual examination showed an indefinite boggy mass in the left cul-de-sac. At operation the left ovary and tube were bound down to the broad ligament, and there was persistent hemorrhage from a small rounded mass upon the ovary; this ovary and tube were removed, as was also the right. After a stormy convalescence the patient was discharged a month later. Examination of the mass on the ovary revealed an ectopic sac containing a tiny fœtus.

Report of a Case of Double Sided Mastoiditis Complicating Influenza With Operation.

Dr. Carl Felt: A boy of fifteen years, on the third day of an attack of influenza, developed running ears on both sides. This was followed by a septic course, and, although there was no œdema or tenderness over the mastoid, it was decided that the mastoid antra were involved. Double mastoid operation was done, and both antra were found filled with pus, and there was considerable necrosis of the bone, but the mastoid cells were not invaded. Healing was complete in three weeks.

Report of Two Cases of Ovarian Cystoma.

Dr. F. C. Hammond: A woman, eighty years of age, had been suffering from an ovarian cyst, but operation was refused, and she died a month later. In the aged prognosis of operation for ovarian cyst is extremely favorable. The benign cyst is the most frequent ovarian tumor found in the aged.

In a woman, aged twenty-five, a papillary cyst was found, adherent to the anterior abdominal wall. Ovariotomy was done, and part of the abdominal well resected. There was recurrence, the abdomen was again opened, and found filled with a large carcinomatous mass. The patient died five months after the first operation.

Dr. Fitzpatrick: I recall a patient, eighty-two years of age, operated upon by Dr. Krusen on account of difficulty in urination and inability to walk. Two multilocular ovarian cysts, one twelve and the other thirteen inches in circumference, were removed. The patient recovered in three weeks and live for seven or eight years. Another patient was tapped before the operation, and twelve gallons of fluid removed. She was sixty-five years of age, and made a satisfactory recovery.

Dr. Schell: I recall a case of a woman sixty-five years of age, who was so large that a special chair had to be constructed for her. She had refused operation because her family doctor assured her that he could cause the tumor to disappear. She was tapped, and 104 pints of bloody fluid withdrawn. The next morning a multilocular cyst was removed and a large part of the abdominal wall resected. The patient recovered.

THE NATIONAL CONFEDERATION OF STATE MEDICAL EXAMINING AND LICENSING BOARDS

Held its nineteenth annual convention at the Hotel Marlborough, Atlantic City, N. J., June 7, 1909. The meeting was called to order by the Vice-President, Dr. A. Ravogli, of Ohio. There were present Drs. Edwin B. Harvey and W. T. Councilman, Massachusetts; L. F. Bennett, Wisconsin; Charles A. Tuttle, Connecticut; F. C. Zapffe and A. D. Bevan, Illinois; W. J. Means, N. R. Coleman, J. A. Duncan, R. A. Baker, and M. A. Jerome, Ohio; Abraham Flexner, of the Carnegie Foundation; N. P. Colwell, of the Council on Medical Education; Henry Beates, J. C. Guernsey, Augustus Korndoerfer, Edward Cranch, C. S. Middleton, H. L. Northrop, and D. P. Maddux, Pennsylvania; A. B. Briggs, G. P. Swarts and J. H. Bennett, Rhode Island; E. D. B. Godfrey, New Jersey; W. W. Potter, W. S. Ely, A. Vander Veer, and A. T. Bristow, New York; F. S. Raymond, Tennessee; George Dock, Tulane

University; W. H. Welch, Maryland; and S. D. Van Meter, Colorado.

The Minutes of the eighteenth annual convention, held in Chicago, June 1, 1908, were read and approved.

After appointing Dr. Harvey and Dr. Guernsey as an auditing committee, Dr. Ravogli called Dr. Guernsey to the chair and delivered his address, which consisted of a eulogy of the late Dr. Thomas J. Happel, and a paper on "The Necessity of a Practical Test for Candidates in the State Examinations."

On motion, a committee was appointed to draft resolutions commemorating Dr. Happel, and a recess of five minutes was taken, out of respect to his memory.

The report of the Executive Council was read by the Chairman, Dr. N. R. Coleman. Acting upon the recommendations contained in this report, a committee of five, all of whom are members of State Boards, was appointed to investigate and report at the succeeding meeting of the Confederation on the subject of clinical instruction in medical colleges; and provision was made for the presentation of this subject by clinical teachers themselves. The Secretaries of each of the State and Territorial Examining Boards, and of the District of Columbia were appointed as a Committee of Official Correspondents of the Confederation.

Dr. N. P. Colwell then read a paper on "The Need, Methods and Value of Medical College Inspection," following which the report on "Standing of Medical Colleges" was read by Dr. James A. Duncan. These papers were discussed by Drs. Abraham Flexner, of the Carnegie Foundation; W. J. Means, R. A. Baker, Henry Beates, M. G. Motter, N. R. Coleman, Edwin B. Harvey and F. C. Zapffe.

After a recess for luncheon, Dr. J. C. Guernsey read the report of the Examination Committee. This report was referred to the Executive Council for further consideration, and on the basis of recommendations contained therein the following resolution was adopted:

Whereas, a mixed examination, oral, practical and written, of applicants for medical licensure in every State is important, therefore, be it

Resolved, That this Confederation earnestly recommends to the various State Boards now restricted as to their methods of conducting examinations to take proper steps to secure amendatory legislation to enable them so to conduct their examinations.

Under the head of "Symposium on Examinations," the following papers were presented: "Practical *versus* Theoretical Examinations," by Dr. W. T. Councilman; "The Inadequacy of the Written Examination," by Dr. Edwin B. Harvey; "What Branches or Portions of Branches Should be Included in the Written, and What in the Oral Examination?" by Dr. J. C. Guernsey; "Is It to the Best Interests of Students and Medical Examining Boards to Have Divided Examinations?" by Dr. William Warren Potter; "The Feasibility of Practical Examinations, by Dr. Augustus Korndoefer; "How Can Practical Examinations be Graded and Recorded?" by Dr. L. F. Bennett.

Dr. M. G. Motter, as a part of the Secretary's annual report, reviewed briefly the work of the Sub-Committee on the Teaching of Materia Medica and Therapeutics of the Council on Medical Education, A. M. A. The recommendations contained in his report were referred to the Executive Council, and the following resolutions were finally adopted:

Whereas, it is generally recognized that the time available for instruction in therapeutics, materia medica and pharmacology does not suffice for the study of all the known drugs; and

Whereas, it is also recognized that the limited time can be devoted, to best advantage, to acquiring a thorough familiarity with the characters, actions and uses of the important drugs, at the expense of those of doubtful or negative value; therefore, be it

Resolved, That the National Confederation of State Medical Examining and Licensing Boards urges upon its constituents the advisability of confining examination questions to the most important preparations of the more important drugs.

Resolved, That it recommends to their attention the report of the Sub-Committee on the "Teaching of Materia Medica," etc., of the American Medical Association's Council on Medical Education; and be it further

Resolved, That the President of the National Confederation of State Medical Examining and Licensing Boards be, and is hereby, authorized and instructed to appoint a committee of three to confer with the Council on Medical Education, and to compile and report to this Confederation a list of the more

important drugs and their preparations, to which the examinations of the constituent Boards may be confined, this list to be published in the *Journal of the American Medical Association* as with the approval and endorsement of the Confederation.

The several papers in this symposium on examinations were discussed by Drs. Dock, Northrop, Beates, Middleton, Van Meter, Vander Veer, Motter, Swarts, Harvey, Councilman, Korndoerfer, Bennett and Guernsey.

The Auditing Committee reported that the accounts of the Secretary-Treasurer had been examined and found correct.

Dr. Edward Cranch, of Erie, Pa., Dr. George MacDonald, of Washington, D. C., and Dr. A. B. Briggs, of Providence, R. I., were elected to membership in the Confederation.

The Secretary and the Chairman of the Executive Council were authorized to make the necessary arrangements for the Convention of 1910.

The following officers were elected for the ensuing year: President, Dr. A. Ravogli, Ohio; Vice-Presidents, Drs. J. C. Guernsey, Pennsylvania, and Charles A. Tuttle, Connecticut; Secretary-Treasurer, Dr. M. G. Motter, Washington, D. C.

The Confederation then adjourned to meet on the day preceding the annual convention of the American Medical Association in 1910, and at the place of that convention.

MURRAY GALT MOTTER, M. D., *Secy.*
1841 *Summit Place, Washington, D. C.*

Book Notices.

New and Non-Official Remedies, 1909. Chicago, Press of American Medical Association. Small 12mo. 167 pages. Cloth, 50 cents.

This book contains descriptions of "articles which have been accepted by the Council on Pharmacy and Chemistry by the American Medical Association prior to Jan. 1, 1909." It is proposed to issue annual editions. The usefulness of the book to practitoners is very much impaired by not including the therapeutic indications of the preparations accepted.

Practical Medicine Series. Under general editorial charge of GUSTAVUS P. HEAD, M. D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Volume I. Clinical Medicine. Edited by FRANK BILLINGS, M. S., M. D., Head of Medical Department, and Dean of Faculty, Rush Medical College; and J. H. SALISBURY, A. M., M. D., Professor of Medicine, Chicago Clinical School. Series 1909. Volume II. General Surgery. Edited by JOHN B. MURPHY, A. M., M. D., LL. D., Professor of Surgery, Northwestern University, Chicago, etc. Series 1909. Chicago. The Year Book Publishers. 12mo. Cloth.

The volume on *Clinical Medicine* contains 403 pages and the price is $1.50. That on *General Surgery* contains 617 pages, and the price is $2. Each of these is one of a series of ten volumes a year, covering the entire field of medicine and surgery, and represents advances during the year prior to publication on the subject of which the volume treats. While each volume has a price of its own, the entire series, if paid for at one time, can be secured for $10.

As indicative of the amount of literature on the subject, over 116 pages of the *Clinical Medicine* volume are given to tuberculosis. Diseases of each of the various organs, infectious diseases, metabolic diseases, etc., receive their due share of space—according to the advances during the past year. Illustrations are freely used, and a good index is added.

The volume on *General Surgery* is a much larger book, and apparently notes advances during the past year on practically every department. It is also fully illustrated and well indexed.

The annual subscriber to this "Practical Medicine Series" will find himself well repaid.

Editorial.

Medical Society of Virginia.

Before the next issue of this Journal the Preliminary Announcement of the Fortieth Annual Session of the Medical Society of Virginia will have been mailed to members. The Session will be held at Roanoke, Va., beginning Tuesday night, Oct. 5, 1909. Dr. Lewis G. Pedigo, of Roanoke, is Chairman of the Local Committee of Arrangements, and it would seem has paid attention to every detail essential to the comfort of those who may attend and to the success of the scientific sessions as well.

The special purpose of the postal announcement is to call for titles of papers to be presented during the session and to arrange the order of their occurrence on the Program.

If the number of papers demands it, the Society will be divided into at least two sections —a Surgical and a Medical Section. But the main desire of the Committee on Program is, as far as possible, to get all papers presented in a single section.

The approaching session, in a scientific sense, promises to be a most excellent one. Able authors have promised contributions. The President, Dr. Stuart McGuire, Richmond, has made excellent selections of parties invited to contribute papers. The subject selected as the symposium for discussion this year is *pneumonia*: (*a*) in adults, Dr. John Rennie, Petersburg, Leader: (*b*) in children. Dr. W. E. Anderson, Farmville, Leader; (*c*) treatment, Dr. W. A. Plecker, Hampton, Leader.

Among important business matters to be attended to is the selection of a completely new Board of Medical Examiners—one from each of the ten Congressional Districts of Virginia, and two from the State at large. The terms of office of the present Board expire January 1, 1910, and the successors are to be commissioned for four successive years, beginning January, 1910. No more important matter can be considered by the profession than the proper selection of components of this Board.

All members of the Executive Council of the Society are also to be selected at Roanoke Session—the term of office to be decided by lot—for one, two and three years, respectively.

Of course, an absorbing subject of general interest to the profession will be the laying out of plans to secure the rightful claims of repeal of State license taxes on doctors. The Chairman of the Society's Committee on the subject, Dr. Geo. A. Stover, South Boston, Va., is already in consultation with others of the Committee, getting the report ready, etc.

Medical Education.

In the *Transactions of the Medical Society of Virginia*, recently issued, is a paper by Dr. R. H. Whitehead, of the University of Virginia, deserving careful consideration by all friends of medical education—especially as it affects our section of the country. In the last fifteen years or so conditions have very much changed; and whether altogether desirable or not, the demands of the profession at large, as well as the advanced educators of the day, call for increased terms of tuition and additions to medical courses, which will be hard to meet unless those specially interested take time by the forelock and act accordingly.

The requirements which were generally met by reputable colleges, lengthening the time of annual instruction from four to six or seven or even eight months, and the number of years of medical students' life from two to three and then to four years, have resulted in a marked diminution of annual matriculates. And if the cry now being heard for a still further lengthening of tuition to five years is to be met, it needs no prophetic power to foresee the still further decrease of medical matriculants.

The present requirement in most medical colleges for entrance into the first year's class is that the student shall have had full four years of higher academic education. This usually brings him up to the age of twenty years. Add to this four or five years of medical courses and the young man is necessarily twenty-four or twenty-five years of age before he can graduate as a Doctor of Medicine. Leaving out of consideration the possibility of failures in some of his class examinations, which will throw him back a year or two, it is being urged that every graduate in medicine should have a year or so in clinical work before he starts out independently to practice; hence, the seeking of young graduates to become House Physicians or Surgeons a year or so, or the assistants of reputable practitioners. There are usually vacancies in such positions—especially now with the multiplicity of city hospitals, private and public hospitals, and sanitaria throughout the State—to provide for such wants.

During the whole of these five or six years, the medical student and young graduate has scarcely an opportunity to make the money needed for his medical education. He must either be one possessed of a good portion of this world's goods, or an impulsive financial adventurer if he undertakes to borrow enough from his friends to carry him through the medical course. Thus many a worthy poor, but capable, man foreseeing the deprivations in

which he places himself and his friends, will have to forego the study of medicine.

With such lessened and still decreasing number of matriculants, none of the colleges can safely afford to raise their tuition fees, and none but the most heavily endowed institutions can afford to lessen such fees. So that the plain fact is apparent that if they attempt to keep up with the demands of the times, even as they now are, and especially if they attempt to keep up with further demands, many of the colleges must face inevitable bankruptcy—nothing but specially large endowments can save them—and such endowments are not probable.

All over the country, foreseeing such an inevitable fate, medical colleges are amalgamating, and thus, by consolidations, hope to maintain themselves. If two or three colleges in a city or State last year had four or five hundred students, the causes above stated will lead to a much lessened number next year, and the following year, etc., until finally those institutions, dependent on tuition fees, will have to go out of business. But if the two or three such colleges were to consolidate upon equably mutual terms, then the probability is that the consolidation would retain enough students to well pay expenses of the one institution in a given city or State.

In the financial condition of most of the medical colleges of the country—except those that are consolidating their forces and material—relatively few of them can afford to keep up their laboratories to the increasing high standard demanded, or to properly compensate competent laboratory teachers. Professors having charge of distinctly clinical courses, if provided with ample hospital facilities and a competent corps of assistants, etc., if they prove successful before their classes, can usually establish for themselves reputations extended enough to bring to their practice influential and compensative patients from all parts of the State or country. But the anatomist, the physiologist, the pathologist, etc., have no such opportunities. If competent in their respective fields, they can establish only for the college itself the reputation of having good teachers. These latter, of course, should receive salaries enough to be compensative, as should also the Proctor and other such officials or helpers.

We will not for the present make any special application of our remarks.

With reference to Virginia, in the same volume of the *Virginia Medical Society Transactions,* Surgeon-General Rixey, of the United State Navy, calls attention to the unusually large percentage of graduates from the Virginia medical institutions—especially the University of Virginia—who have well stood the examinations by the Naval Medical Board, and are surgeons or assistant surgeons in the United States Navy—a number of whom have attained eminence in that branch of service. This in itself speaks volumes in favor of the standard of graduations adopted by the Virginia medical institutions.

Doctors' Repeal Bill—Offensive Opposition.

In the Virginia House of Delegates, on March 4, 1908, when the question of repeal of the physicians' *special* license tax was before that body, many speeches were made—some for and some against the pending measure. The majority of the speakers—evidently much interested—spoke earnestly, and, let it be said, several of those who opposed the bill had some kindly word for the family doctor.

There were, however, certain notable exceptions to such amicable sentiment. While several members indulged in harsh criticisms, one speech singled itself out from among all others because of its offensiveness. This was made by Col. Eugene C. Massie, a delegate from Richmond City, who capped the climax by his "vitriolic" onslaught of billingsgate so offensive that we feel justified in quoting from the Richmond daily papers of March 4 and 5, 1908, certain of his gallery remarks, as follows: * * * "I weigh my words distinctly, and am ready to stand by them." * * * * "The methods of doctors in 'hounding reputable citizens' who were not of their school of medicine were described, the speaker claiming that physicians were no better than other classes of citizens, and that if it had not been for the lobby, the measure would have been unanimously voted down. Mr. Massie said there were some 150 classes who paid license in Virginia, 'including stallions, jackasses and hobby-horse machines,' and he saw no reason for the exemption of doctors."

Colonel Massie, in a lengthy attempt to explain his hostility to the measure, as published in the *Semi-Monthly* of March 27, 1908, goes on to state: "The remark which I am

informed has given offense was made as a humorous hit in the heat of debate, and I emphatically disclaim any intention of being offensive." Of course, it was all right to make a disclaimer of intention—after the battle was over. The "hit" was evidently intended "in the heat of debate" to have its effect; and no doubt it did. Certainly many who heard his remarks regarded his manner as well as his remarks as distinctly offensive. We leave the subject to our readers for their determination as to his effort to make a "humorous hit" at the expense of a reflection upon doctors, who no doubt form a good portion of his constituency.

Catawba Sanitorium.

The new State Sanitorium, located at the old Roanoke Red Sulphur Springs, in Roanoke county, Va., for the treatment of tubercular cases, was opened for the reception of patients July 15th. While there were more than one hundred applications for admission, the accommodations at present are sufficient for thirty only. This number will be increased from time to time as means permit. The largest part of the money apportioned and available for the fight against tuberculosis was consumed this year in the purchase price for grounds, buildings, equipment, etc; consequently the same amount of appropriation for next year will permit of extension of the work in other directions, especially as to a provision for the reception of many more patients.

The State Department of Health was fortunate in securing the services of Dr. Truman A. Parker, of Richmond, who has consented to assume charge of the institution for about one month to assist the Department in getting arrangements completed before a permanent superintendent is chosen. Dr. Parker, besides having given much time to the study of tuberculosis, is a man of varied attainments and much executive ability.

The Lynchburg Academy of Medicine,

At its regular meeting on July 6th, discussed the campaign being waged by the State Department of Health against disease and ignorance, and considerable interest was manifested in the work being done. As was shown, every effort is being made to educate the public and have it to appreciate that much of the mortality from typhoid fever, pulmonary tuberculosis, and many other diseases is preventable, and that by the expenditure of a little money in the right direction, many thousands of human lives may be saved annually.

Dr. V. V. Anderson is Secretary of the Academy.

Hospital for Petersburg.

The Home for the Sick, the general hospital at Petersburg, Va., is to be enlarged by the erection of a new building costing twenty-thousand dollars. This amount, so it is announced, has been raised by private subscriptions. The old building, which accommodates about twenty-five patients, will be re-modeled and with the new addition will be equipped with all modern conveniences.

The Piedmont Medical Society

Held a regular meeting at Orange, Va., July 17th. The subject for general discussion was Toxemia of Pregnancy, Dr. F. G. Scott being leader. Dr. Jas. T. Walker, of Barboursville, is President of this Society, and Dr. Lewis Holladay, of Orange, is Secretary.

Dr. O. C. Brunk Reported Ill.

As we go to press, we regret to learn through the daily papers that Dr. O. C. Brunk, Superintendent of the Eastern State Hospital, Williamsburg, Va., is seriously ill.

Practice for Sale.—In a rising town and good surrounding country—assuring $2,700 to $3,000 practice—an excellent location is offered to the purchaser of my property. House fitted up with office, pharmacy, operating room and suit of rooms for private hospital work.

Address, LOCATION, care of *Virginia Medical Semi-Monthly,* Richmond, Virginia.

Obituary Record.

Dr. John Henry Crockett

Died at his home in Tazewell, Va., July 13, 1909, after an illness of several weeks. Dr. Crockett was a graduate of Vanderbilt University of 1879, and joined the Medical Society of Virginia a few years later. He is survived by his wife and several children.

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Original Communications.

THE EPILEPTIC.*

By WILLIAM FRANCIS DREWRY, M. D, Petersburg, Va.

Superintendent Central State Hospital; President National Association for the Study of Epilepsy and the Care of Epileptics; American Medico-Psychological Association; President Medical Society of Virginia, 1908.

The subject discussed in this paper is of such interest and importance that I offer no apology for again presenting some thoughts regarding it. As an individual, a member of the family and the community, and a patient, the epileptic occupies a place in the minds of both the profession and the laity, as well as in his relation to the state, different from that of any other human being. He had been a conspicuous object of pity, special solicitude, neglect, abuse, derision, humane care, legal enquiry, or of scientific study.

Epilepsy has ever been a mysterious affection. About its real cause and nature, even in this day of research and brilliant scientific achievements, there are many contradictory views advanced by equally eminent authorities. And so it was many years ago when Shakespeare wrote:

> "And now remains,
> That we find out the cause of this effect:
> Or, rather say, the cause of this defect:
> For this effect, defective, comes from cause."

No definite uniform morbid anatomical findings applicable to all types have yet been demonstrated. One school of epileptologists advances the theory that all epilepsies are dependent upon a visible organic brain lesion; another that they are attributable to an embryonal condition, to "a 'potentiality' which leads to instability and early death of certain portions of the brain cortex." Another view is that "epilepsy is more often due to a condition of specific systematic poisoning—a condition in which deep seated errors exist in the fundamental principles of nutrition, in metabolism, in the ultimate cell life—in other words, in the alpha and omega of nutrition." (Spratling). Within the past year or two some distinguished English authority brings up for reconsideration the old view that a portion of cerebral circulation, sudden in onset, and sometimes detected by the temporary stoppage of the pulse at the commencement of an epileptic fit, is the cause both of the unconsciousness and the convulsions, which occur in this disease. The pathologist at Craig Colony, Dr. Munson, who has done valuable work, says: "If after years—*years* I repeat—of patient investigation, we shall finally be rewarded with light on the etiology of one or two important types of epilepsy, we shall have occasion for much rejoicing." In his work, published last year, Dr. Archibald Church says that "an insight into the nature of epilepsy has as yet eluded us. The entire subject remains entirely hypothetical."

Much has been written about idiopathic or genuine epilepsies—those said to be due wholly to "inherently defective conditions in the cells of the brain," or those in which the physical examination is negative, in contradistinction, on the other hand, to symptomatic epilepsies, or those due to extrinsic causes, such as irritation of the cerebro-spinal, gastro intestinal, and visceral and external or peripheral nerves, acting reflexly on the brain and nervous system. Some able neurologists are advocates of the organic theory, while others equally able, hold that, while there may be an organic basis for the disease, yet, in the absence of demonstration to that effect, there must still be maintained a distinction between genuine and symptomatic epilepsy. "If it were practicable and desirable," says Spratling, "to make a grand division between the epilepsies, it would simplify the study of an important problem to a very great extent. We might then place all the essential epilepsies in one group, the unessential in another." Kraeplin says, "We do not be-

*Read recently before the Lynchburg, Virginia, Medical Society.

lieve that the disease group recognized to-day as epilepsy presents a clinical unity. Further knowledge probably will disclose in it several different disease processes." The prospectus of "Epilepsia," a valuable German quarterly, starts out with the statement that Dr. Hughlings Jackson has long held the view that our knowledge of epilepsy can only be promoted by a combined effort, in which the chemist, the neurologist, the psychologist, the physiologist, the anatomist, and the law student participate.

I shall not go into a description here of the variant types of epilepsy or of the symptomatology. For many centuries the malady has been known under one name or other, described in sacred, in secular and in scientific works, but nowhere is the grand malseizure more graphically described than in a poem written two thousand years ago by Lucretius, who is probably the only writer who has made the description of the dread disease the subject of verse:

"Oft, too some wretch, before our startled sight,
Struck as with lightning, by some keen disease,
Drops sudden—By the dread attack o'erpowered
He foams, he groans, he trembles and he faints;
Now rigid, now convulsed, his laboring lungs
Heave quick, and quivers each exhausted limb.
Spread through the frame, so deep the dire disease
Perturbs his spirit; as the briny main
Foams through each wave beneath the tempest's ire.
He groans since every member smarts with pain.
And from his inmost breast, with wontless toil,
He raves since soul and spirit are alike
Disturbed throughout, and severed each from each
As urged above distracted by the bane.
But when, at length, the morbid cause declines,
And the fermenting humors from the heart
Flow back—with staggering foot the man first treads,
Lead gradual on to intellect and strength."

Whatever theories may have been advanced as to the origin of epilepsy, or the underlying pathological changes in the brain of an epileptic, or whatever differences there may be regarding the nature of the affection, or whether it be a disease per se or a symptom, the practical epileptologist and clinician must be content at this time with something like the following as a working basis: That heredity plays perhaps the most significant role as a predisposing etiological factor in that the parents of epileptic offspring are frequently the subjects of epilepsy, insanity, alcoholism and various nervous diseases, that is, that a "condition of nervous system is inherited, which easily determines the development of epileptic fits." That the disease, or, better, the symptom complex, is due perhaps to one or more of the following causes and others, viz., the presence of toxins in the gastro-intestinal tract, various poisons, such as alcohols and lead, defective metabolism, diabetes, gout, cerebral hemorrhage, organic brain disease, infantile paralysis, meningitis, traumatic injury to the brain, acute infectious diseases, measles, pertussus, emotional disturbance, fright, mental stress, over exertion, and numerous peripheral sources of irritation,

As to therapeutics, because of a lack of more definite knowledge regarding the pathology, the morbid anatomy, and the etiology, applicable to the various groups of epilepsies, we still resort largely to experimental and empirical therapeutic measures. What is of benefit in one case may be useless in another; consequently we are ever ready to prescribe whatever is suggested as having any promise of possible value. Books and journals teem with mention of medicinal remedies that have been tried with varying degrees of success, but often without result. Why not discard all useless drugs? In this connection, one is reminded of what Goethe, in a pessimistic mood, said: "All professional men labor under a great disadvantage in not being allowed to be ignorant of what is useless. Every one fancies that he is bound to transmit what is believed to have been known."

While I have treated many hundreds of cases of epilepsy and have from time to time, prescribed many medicinal remedies, I have seen few drugs that were of much practical use. I have, therefore, come to be quite skeptical so far as concerns the direct curative effects of medicine or surgery alone. True, they are remedies that seem to be of some value, but certainly there is no specific remedy. The gastro-intestinal tract, the kidneys and the skin should receive special and constant attention. Suitable purgatives, intestinal antiseptics perhaps, diuretics and baths are essential in bringing about needed elimination and combating the formation of toxins and the setting up of an auto-intoxication to which the seizure may be due.

In every case, as soon as the disease manifests itself, the bromides should first be tried. If amenable to these drugs, favorable response, an arrest or lessening of the attacks, will be apparent within a comparatively short time, say a year. If suddenly withdrawn from one who has long been accustomed to taking them status epileptous may result. Avoid too large doses. Usually not to exceed a dram, and frequently less, during a day is sufficient, whether

one bromide or a combination of the salts be given. Be guided in the quantity given, the time it is given, and the number of daily doses by the effect on the patient and the time the seizures usually occur. Administer the bromides in large quantities of water. On account of accumulative action, it is well to suspend their use temporarily from time to time, and flush out the system by means of purgative and diuretic. By adding small doses of arsenic in the form of Fowler's solution, to the bromides acne seldom occurs. Knowing the time at which the seizures usually occur, give an increased dose just prior thereto, instead of following the usual method of giving a dose after each meal.

In senile (arteriosclerotic) epilepsy, or in cases of low arterial tension, functional or organic diseases of the heart, or when a heart tonic is indicated, digitalis, strophanthus, adonis, or nitro-glycerine, may be combined with the bromides with benefit. In anaemic, debilitated, or neurasthenic cases, combine bromide of soda with glycerophosphate of soda. Iron may also be given with benefit in such cases. A combination of bromides with adonis vernalis and codeine gives good results in some cases. Bromipin (bromine and sesame oil) and bromalin are remedies of some value, especially in feeble or asthenic cases. Biborate of soda, as an anti-spasmodic, is a valuable remedy when given with bromides. Belladonna, similarly administered, sometimes proves efficacious, when the bromides alone fail. What is known as the Fleichsig treatment—the opium-bromide method—seems to be more beneficial in the early stages or in young subjects than it is in confirmed cases. Horse nettle (Solanum Cariolinese) has value in some cases and others have been benefitted by the so-called intestinal antiseptics—beta-naphthol, salol and other drugs of this class. Occasional doses of calomel and salines have apparently some influence, certainly in lessening the mental hebetude and irritability. Likewise, diruretics —the bromides being eliminated chiefly by the kidneys—should be freely given. Baths are useful adjuvants, in fact indispensable in encouraging needed bodily elimination. Hypochlorization, that is, the suspension of sodium chloride from the diet, using instead the bromide salts, preferably the sodium, with the food, has had good effect in quite a number of cases.

Status epilepticus, that is, a prolonged and increasing number of seizures, is a dangerous condition and requires prompt and heroic treatment. Large doses of bromides and chloral per rectum, inhalations of chloroform or oxygen, hydrobromate of hyoscine and morphia, hypodermically, ice water sponge baths for the high temperature, are indicated to check the serial outbursts. In the stuporous stage which follows, strychnine, spartein, digitalis, stimulants, etc., are required. Warm baths, saline enema, nutritious liquid food should be a part of the regular treatment of the post status depression.

A wholesome physical and mental regimen should at all times be maintained. Judicious exercise, congenial employment, an abundance of fresh air, hygienic surroundings, avoidance of every possible source of mental stress, anxiety and excitement are of special importance. In short, endeavor to put and keep the patient in as normal condition as possible. In every case the individual should be closely studied. His temperament, weaknesses, and every ailment should claim attention. There must be no cessation for years in attention to the patient.

The dietary of the epileptic is more important than drug treatment. This should consist of simple, easily digested food in reasonable variety, and never taken in excessive quantities. Pork, veal, ham, anything fried in grease, small berries with hard seeds, cake, pastry, alcoholic beverages, etc., should be avoided. Here again a close study of the individual becomes necessary that we may know what best agrees with the patient.

As to surgical intervention, it has been observed that in the so-called "reflex" cases much improvement or cure has often followed operations for the removal of all extra cranial sources of irritation. Search, therefore, for and promptly remedy or remove diseased pelvic organs, relieve an adherent prepuce, correct eye defects and ear troubles, remove nasal growths, adenoids, etc., but do not remove sound organs. Some cases of traumatic epilepsy, due to an injury of the head, followed by definite pathological and localized conditions, are amenable to surgical treatment. Every case of brain injury should be most carefully examined into, and if there is depression of the skull, a blood clot or other condition that could possibly be the source of an ir-

ritation productive of epilepsy, the trephine should be at once brought into use. The earlier the operation the better the results, yet occasionally years after an accident operation results favorably. The best time, however, to operate is unquestionably immediately after injury.

Dr. Pearce Bailey, in a paper on traumatic psychic epilepsy, concludes as follows:—"The indications for operation are: Evidences of local irritation, such as adherent scars, suppuration and depressed bone, localized headaches and explosive psychic attacks. If the headaches are always localized and under the site of the original injury, and if they herald the explosive attacks, operation is indicated, even if surgical indications are wanting." Da Costa is of the opinion that only from four to five per cent. of epileptics can be relieved by surgical operation. Dr. Adolf Meyer, an eminent psychiatrist, says that "the early recognition of traumatic psychic epilepsy is of very great importance, and in spite of the fact that trephining is usually discouraged because so many operations on the head have been done uselessly, I think we should have the courage of our convictions and emphasize the desirability of an operation in certain cases."

An article was published sometime ago in the *Boston Medical and Surgical Journal* to the effect that 23 out of 167 (nearly 14 per cent.) skull injuries in the Civil War are on the pension list as suffering from epilepsy; that of 575 Franco-Prussian cases of head injury nearly 27 per cent. developed epilepsy or an epileptoid condition. The author concludes by advising early operation in all cases of skull traumatism as a preventive measure.

In reference to the curability of epilepsy it may be said that the well defined "idiopathic" type, after the "habit" has been established, is certainly very rarely cured, but that some such cases in the very early stages, and those of a reflex origin, the "symptomatic" cases, are more or less promising, and some recover. In the matter of reported recoveries, however, there should be a better understanding as to how long a patient should be free from seizures before he is pronounced cured. I should say the period should be at least five years, probably longer. It is the concensus of opinion among epileptologists that from five to twenty per cent. of all cases subjected to very early and proper treatment recover, or at least there are years of cessation of the seizures.. Those who are free from inherited neuropathic influences stand a better chance of general improvement, and are not so apt to become confirmed epileptics and to suffer serious mental impairment. In those cases in which the disease is established before the age of ten, the prognosis is the most unfavorable, affording the smallest percentage of recoveries and the highest percentage of mental impairment. The best results are obtained in cases developing between the ages of fifteen and twenty, both in respect to the arrest of seizures and the preservation of mental integrity. Spratling, who takes a somewhat optimistic view of the curability of epilepsy, says that if fifty per cent. of the cases admitted to Craig Colony could be admitted during the first year of their disease, twenty-five to thirty per cent. could be cured.

From ten to fifteen per cent. of epileptics eventually become technically insane and are committed to a hospital as such. In as many more there are varying degrees of dementia. In practically every case of the genuine type or after the "habit" has been established, there is a tendency sooner or later to mental impairment. Mental integrity, in some, however, is not apparently affected, except temporarily, at about the time of the paroxysm. It is to prevention, rather than to cure that we must look to the diminution in the number of epileptics. eHredity, improper training in childhood, unhealthy environment and bad living methods, together with alcohol, certain constitutional diseases and the effects of vice, are responsible for a large proportion of the cases.

It has doubtless been observed by all physicians that epilepsy is most apt to develop either during the first seven or eight years of life, the period when there is the fastest brain growth, or between the age of 15 and 20, during the period of puberty and the early active development oof the reproductive system. For this reason every precaution should be taken against over mental strain at school, and undue-physical development at any time, particularly if the child is of a "nervous temperament" or has a weak heredity. As a predisposing cause, heredity can be traced to between twenty and fifty per cent. of cases. The first step, then, in our efforts to reduce the prevalence of epilepsy is by non-production. Let physicians in their professional capacity teach parents and children of the almost certain men-

tal, or physical, or moral degeneracy in the offspring resulting from the union of two stocks when either side is already tainted with insanity, epilepsy, alcoholism, certain constitutional and other transmissible degenerating diseases and defects. The State should enact prohibitive laws regarding marriage of the unfit, with the view of protecting the race from disastrous diseases and invalidism. This has been done in some states. Sterilization, too, as a means of prevention of the reproduction of the unfit is gaining favor and has been resorted to to a limited extent.

Every practitioner is confronted with the many difficulties in the way of applying at home even what is known to be efficient in the treatment and care of epileptic patients. The usual outcome is that many cases are neglected, hidden away, or finally sent to the almshouse, or permitted to drift on to an early death, to dementia, insanity, and so forth. Oftener than otherwise it is a matter of impossibility to impress upon the patient or his friends the importance of those measures that are most essential in the treatment of his case.

Any intelligent observer notes the physical changes, intellectual deterioration and moral bluntness in most epileptics as the disease progresses. In almost every case irritability, moroseness, mental confusion and dullness, or temporary loss of memory occur before and after an attack. At such periods the victim frequently becomes violent to the point of attacking others. Brutal and revolting crimes have been committed by apparently harmless epileptics while in a pre- or post-epileptic mental condition, or during an attack of what is known as psychic epilepsy, without any knowledge of the acts. Here is an illustrative case.

An epileptic, while in a state of amnesia and automatism, killed a man on the street in one of our towns. After a thorough study and an analysis of his history and his case, I was satisfied that he was, on account of the diseased condition of his brain, totally without knowledge of the act, and hence irresponsible, and so testified at his trial. He was adjudged insane, sent to a hospital where his mind continued to gradually fail, and within a year died in an epileptic convulsion. This character of cases is especially of great medico-legal importance and constitutes one of the gravest problems in forensic medicine.

It is now generally accepted that throughout the country there is an average of one epileptic to five hundred of the population. Some investigators put the ratio larger. At all events there are in the United States about 180,000 of this class of diseased people. The number in Virginia has been estimated at about 3,800. The State hospitals shelter 350, the almshouses about seventy, and private institutions open their doors to a few. The rest are at home, where, with few exceptions, they pass a comparatively useless and unhappy existence.

Colony care and treatment is the most successful step yet taken. Recognizing the distressing condition of these unfortunates, the impossibility of properly treating but a few of them at home, the burden they are upon the family and the danger they frequently are in the community, the evils of the propagation of their kind to further tax the home and the State,—increasing the number of dependents, defectives, and delinquents, and with a view of giving accurate study to the nature, causes, and rational treatment of the disease, special institutions have been established in various parts of the world. In this country twelve states are successfully operating colonies and caring for more than 5,000 patients. In a number of States there are private institutions, and in the Province of Ontario a public hospital is maintained. In several other States, notably Virginia, Illinois, Alabama and North Carolina, legislative action has been taken looking to the establishment of similar institutions.

Among the agencies that have exercised a powerful influence in carrying forward the movement for State care of epileptics and the study of epilepsy, none has been more effective than the National Association for the Study of Epilepsy and the Care and Treatment of Epileptics. The purposes of the society are, 1. To promote the general welfare of sufferers from epilepsy. 2. To advocate the care of epileptics in institutions where they may receive a common school education, acquire trades and be treated by the best medical skill for their malady. 3. To assist the various States in America in making proper provision for epileptics. The Society deserves the encouragement and support of all physicians, scientists and humanitarians.

The persistent efforts in Virginia for the past fifteen years are too well known to require more than a passing notice. Suffice it

to say that the final outcome has been the acquirement by the General Board of Hospital Directors, of an excellent location near Lynchburg, which possesses well-nigh all the requisites necessary for the development of a colony which should compare favorably with any other in this land. In its extensive acreage (1,000 acres), intersected by beautiful valleys and streams, its rich lowlands and good pasturage, its rugged hills and broad plateaus, its forest of many varieties of native trees, located in the rolling lands of the Piedmont, amid the foot-hills of the Blue Ridge, the towering Peaks of Otter within easy view, the James passing on its way from the mountains to the sea, the busy "City of Hills" under the immediate eye of the observer, the Colony site commands views which, in point of beauty and picturesqueness, is surpassed by no other place in the State. In healthfulness, pleasant atmospheric conditions, convenience and facilities of transportation, nothing is lacking. Now it remains for the State to develop and foster this infant public institutiion and make it fulfill its great mission to humanity and to science. Here will be established for the present a mere beginning—a small institution for the care of white insane and demented epileptics. Every possible effort should be made to get the next Legislature to pass a bill providing for an enlargement of the usefulness of the Colony by throwing its doors open to all white epileptics of the State, sane and insane, who may need or desire care and treatment, education and training under the best possible conditions.

A few years ago, while a member of a Commission on the State Care of Epileptics, appointed by authority of the Legislature, I visited with my colleagues, several institutions, among them the Craig Colony in New York, exclusively for sane cases, and the State Hospital at Gallipolis, Ohio. The general plan of construction (consisting of a number of cottages for smaller groups of patients, and larger buildings for the demented and others who could not appreciate fully home life) and the systems of operation at each were conceived by master minds. At each institution there was an excellent classification of patients. Prominence was given to educational, amusement and employment features. There were schools for the children, and handicrafts were taught the older patients. Gardening and farming were emphasized. Every patient who was able was given congenial work of some kind to do, outdoor sports and indoor amusements and church privileges added pleasure to the lives of the inmates. All these things were in the regular system of care and treatment. Dr. William H. Pritchard, Superintendent of the Ohio Hospital, has been so impressed with the colony plan and its results that he believes that "the greatest boon to the epileptic would be a compulsory commitment to a colony as soon as the disease has become established."

In the organization and upbuilding of the Virginia Colony, it should be borne in mind that there should be in addition to custodial care and facilities for employment, practical education and diversion, a well qualified resident and consulting medical staff with all the necessary appurtenances and laboratory appliances for scientific research and clinical work of every description. The staff should be headed by the best qualified specialist that can be obtained. In short, the Colony should constitute a center for the study of epilepsy in its various manifestations.

In conclusion, I reiterate that the farm colony plan is not only the most economic system of public care and treatment of epileptics yet devised, but furnishes the most satisfactory and promising results and opens up rare opportunities for more exact and broader scientific study of the causes, the prevention, the nature and pathology of the affection. It has been a matter of almost universal observation that the results obtained at colonies have been encouraging.

THE PLAY-IMPULSE AND PUBLIC HEALTH.*

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"And I venture to think that it is not enough to get proper nurture and training when we are young, but that we ought to carry on the same way of life after we have grown up, and confirm these habits." Aristotle, Ethics X. 9, 1.

From the moment of birth when the infant is quieted by the pleasure of a motor impulse in grasping the finger of its mother, to the time in adult life when he is thrilled by the successful performance of some great motor contest, his body is a sensitive barometer in which are registered the delicate but exhilirating impulses of play. While these motor-play-impulses are

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evanescent, flashing with lightning-like rapidity, each one leaves its imprint—traces its route in faint but indelible lines upon the sensitive plate of the tissues.

In a big sense life is a game and the world a great play-ground in which men, who are after all only grown-up children living a grown-up life, are playing a grown-up game. The rules of life's game, which have become somewhat formal, in which the rights of others have become correlated with one's own freedom, are nothing more than the rules of childrens' games who, as they play, become conscious of the rights of others in the defense of their own. Educationally we are all agreed as to the value of the play instinct in the preparation for the higher sociological and ethical duties, but still another proposition says that the play-impulse is equally useful biologically. The young man who has grown up as his mother's book-mark or as a pendant to her apron strings is not best fitted to comprehend or cope with the requirements of life as expressed in social or business laws. So likewise the child who grows up, unconscious of and unstimulated by children's contests which are the expressions of the play impulse, finds himself unable to measure up to or overcome the physical demands made upon his constitution.

The instinct of play is planted within us as a guardian of our organic needs. Not only is this true of the individual child but also of the race. Whenever and wherever in the child this instinct is absent or undeveloped in the same ratio we shall find effeminacy, inefficiency and possibly degeneration; so likewise when we find these conditions in a race history has recorded the same sad end, and vouchsafes a prediction that the future will present no exception. An over-highly-wrought civilization tends, by the very virtues it brings in other ways, to minimize and obstruct the outflow of the play impulse; the time of youth is shortened in the bustling hurry to enter the big game of life; the effort is made to minister to the brain only, for time is not to be spared to minister to the whole body. And yet the boy-intellectual is only a small part of the whole boy —"he's a very little brains and a whole lot something else." Conflict of schedules tends to result always in taking the time from the whole boy, and allotting it to the boy-intellectual.

We teachers, most of to be sure, are a fairly intelligent lot, but we are prone to grow dogmatic and to imagine we can teach a boy something; whereas if we are not careful we not only fail to teach him ourselves, but are apt to prevent him from teaching himself—for certainly nothing is truer than that we cannot teach anybody anything; we can only direct his course of study—point out the straightest paths to the goal of partial or universal experience.

Just at the present moment athletic games, and college games in particular, are being raked over the fire of criticism. Criticism has in fact become a fetish. Some of this criticism is fair, tolerant, sympathetic, and helpful and is justified by attendant evils. Much of it, however, is the loud voice of ignorance which, now, as in all times has been the source of supply for all fetishistic worshippers; it is unjust and unwarranted by facts, intolerant and destructive in character and generally rooted in prejudice, envy or malice. Any good which comes of criticism will not come from that class, but from high minded educators, moralists and humanists who are now demanding, and will forever demand, all the facts before pronouncing judgment; and we may be sure that the harmony of their voices will continue when the blatancy of the herd will have ceased to grate upon the ear. Unfair criticism too is usually found in those who were unfortunate enough to have been born without the play-impulse or to have quickly dwarfed it. The play-impulse is universal, being shared by the kindliest, most useful and intelligent of the lower animals; its tendency is broadening, so that a man developed under its influence will, if not certain, withhold judgment.

A chemist can tell us of quantitative and qualitative changes in matter; and an astronomer can predict eclipses; but the more proficient they become in performing these offices, by the very nature of things, the less competent they become to give advice upon others. When we find a specialist who persists in directing all other human interests we are not disposed to regard him as the best product of his own profession.

Specialization is one of the penalties of advancement; we admire and sympathize with those who are willing to surrender their prerogatives in general in order that they may advance the particular. Yet he should be made to remember that in the other spheres of life he

has abandoned claim to critical ability. Athletics are for adults only a further development of the child's rolling the hoop to which have been added rivalry and competition. So in the same manner life is a further development of athletics with the addition of those disciplines of self-preservation and self-adaptation, of one's own best interests, to the laws of society which have a due regard for the rights of others. By activity his muscles grow bigger and stronger, and he becomes skilled in their use. He now of necessity forges ahead of some; yet always forced to follow others, he is made conscious of his responsibility for those weaker and younger, and responds more readily to the authority of the older and stronger.

This is the time he unconsciously makes the delicate adjustment which subordinates the animal boy to the virtues of a manly citizenship. His consciousness of freedom is evolved out of a complex of experiences—when he flattens Bill's nose in an open contest, when he downs Jim with a fair hold, and jumps about five feet high he finds his liberty and is ready with a definite purpose to seriously enter upon the pursuit of duty.

To the motor impulses which are admittedly educational and health-developmental, we, who are interested in health and longevity, should add with emphasis the psychological and biological influences. The pleasures of muscular activity in motor contest serve to distinguish between the exercise of play-impulse and doing work—performing muscular labor—this psychological emotional feature if you like serves also to differentiate the results of play and formal developmental exercises. We prescribe horse-back riding, sea-bathing and tennis rather than ploughing, ditching or sawing wood because we know the former has that in it making for good that the latter does not possess. We thereby acknowledge that the good results found in exercise cannot be measured by the number of foot-tons of work done. To get the results desired we must secure that other element, the psychological element which cannot be measured by rule and balance. The unfortunate man who is forced into a vacation which does not supply or permit him to secure a sufficient amount of motor-activity of a pleasurable character is sure to suffer inanition and diminished power; and even though he may not consider himself sick he will be a less happy and less useful and productive unit of society. The American boy who pulls at the neighbor's door bell and scampers away bears testimony to this assertion; he's just got to have a little game which uses his play impulse—a little game which offers a contest with a chance of winning. He would just as soon pull at the lamp post if only the lamp post could give him a chase.

Accepting the theory of evolution, we have so far become physically great, not by any intelligent organzied aid we have rendered ourselves, but in spite of all the abuses and neglect to which we have subjected our bodies. But now in the full possession of experience, intelligence and foresight which, if we fail to apply, we shall be held culpable in the sight of the maker of laws of evolution. This assembly of scientists whose business and pleasure it is to care for the public health and who are thereby guardians of the happiness and prosperity of mankind, will not lightly regard any proposition as far-fetched, over-strained or irrelevant, that can be sustained by the same reasoning that impels you forward in stamping out the slimy trail of typhoid fever and even now forces you onward to threaten the stronghold of the "Great White Plague." You will not pass unheeded the cry of *all* mankind when you halt so quickly and minister so tenderly unto the *few*. The unnamed malady and its damages of which we speak exert unobtrusive but baneful influence continuously. It stands at birth's door and greets the entering soul, follows and sometimes leads the unprotected offspring through life, long or short, in order to be present at and precipitate the end.

We have unfortunately proceeded so long upon the assumption that we have a fixed standard of health and longevity, by which we can measure men, that it is with difficulty we accept the relativity of such standards which are at best arbitrary and fluctuating. This standard amply seems to measure those who fall short for it points out a distance yet to go, but how about those who are above it? Shall we regard them as abnormal and adopt the most popular tenet of Socialism which requires that all above must be leveled down to those below? What about him who just measures up to the standard—neither greater nor less? Is he to bask in self-satisfaction and put one of God's patterns away to rust? Would he not rather strive for even greater health and more extended longevity? Of the two classes which

our standard discloses those who are unhealthy are best provided for by those who minister unto the diseased, but the healthy class are neglected and unfortunate in being lulled into a sense of false security and made to believe that they are finished. So, therefore, it is the cause of the unfortunate neglected healthy which we plead before you. Cannot even he be made healthier still; cannot even he be given a greater expectation of life? To argue otherwise is to dispute the evidences of design in nature, and all the biological laws which science has announced. By what authority do we consider the pulse-rate fixed forever? Is the man whose vital functions proceed so easily that he is unconscious of internala organs to be forever regarded as perfect without hope of further improvement? We think not. We rather think that the healthiest man on earth could, under certain conditions, be made healthier still. And if we could add a single second to the length of life of every man yet to be born, the sum total compressed into the life of one individual would suffice to project a mortal man through eternity; and if we could abolish only a single pain from every man yet to be born and subtract the same from the sum-total of the pains of the projected mortal, his life would be as blissful as it would be infinite.

By what character of reasoning do we conclude that one form of exercise is violent, another form moderate—are not these also relative terms arbitrarily established? That which is violent for one may be moderate for another; that which is violent at one time may be moderate at another time in the same individual. Are we not justified in hoping that by care and intelligent progressive training that which is regarded as a man's task now may eventually be performed by a boy? To doubt the principle is to put discredit upon a large body of some scientific men who have established this necessity in any complete scheme of education. Dissertations warning us of the dangers of over-training are well meant and sometimes needful but just at present what we most need are dissertations calling attention to undertraining. Statistics abound justifying the latter but we are aware of none which justify the former. To be sure there is danger of an *individual* overtraining but the danger of the multitude's undertraining is still greater. The basic principle of public health implies the greatest good to the greatest number. There are individuals in whom the smallest amount of butter acts as an intense poison. Do we, because of an individual's unfortunate idiosyncrasy, restrain the use of this important food in the ten thousand to whom it is *the* most nourishing and agreeable form of fat? Instead then of repressing this impulse we should encourage its expression. Negation has its value in the play-impulse as in all things else; and while it is a virtue—a negative virtue—to be without vice, what a boy needs most is the possession of positive virtues. A quiet little boy may be a good little boy but by the same philosophy he could be made a much better little boy by the administration of the proper dose of chloroform. The medical profession began in Esculapius in the treatment of the ills of the flesh; recently it has segregated itself into two groups, one retaining the functions of Esculapius and treating disease in those already attacked, the other endeavoring to defend the healthy from the onslaught of disease, and now may we not hope to go a step further in the segregation of still a third group whose business will be to accentuate health? Now we have medical physicians and medical sanitarians, then we shall add to these a third,—medical biologists.

This human kid is a "curious" animal, he's a bundle of live wires—a six cylinder high tension seventy 1910 model. He is full of life's surging force, a regular little Vesuvius in action. If he is given free vent but intelligently directed, the cone he builds will be symmetrical and complete; if unwisely restrained the shock of his explosion will not end with his own destruction only. Let us give him then a whole experience; give him fresh air, pure water, wholesome food and some chance at "learning," for he should be busy every moment in the making of a man. Too frequently, impelled by a pardonable dogmatism, we hem him about with needless restrictions which serve only to cramp his development; we interfere with or make a mess of a process, the workings of which are directed by the Great Teacher of all.

This American boy for whom we plead then is not a weakling, a degenerate boy—"born short,"—he's a bigger, stronger, and better boy than his father was and is going to be a better man than his father is; George Washington and Thomas Jefferson in a contest with him

would be strictly "up against it." There is no sign that he's going to be lost in the scramble. His pioneer forefathers were great strong men whose play-impulses were whetted by a contest with unsubdued nature, a struggle with the wild beasts and the American Indian, in forcing the forest to surrender to the plough, the fields to yield up their crops and the mountain to disgorge its hoarded treasure of iron and gold. They were at play in the big game of life. The making of a great nation was only an incident in the making of man. The game he played developed far-sighted wisdom, intrepid valor and tireless energy. We repeat then that we are not pleading the cause of a degenerate but the advancement of an improved product—one who comes from the loins of a people who had established the habit of "getting ahead in the world."

Now when in the changed conditions opportunities for primitive contests are gone the offspring will be impelled by his play-instrinct to provide himself with artificial ones of his own. Of course the boy knew better than to pull the neighbor's door bell; about a quart of Father's Strap Oil—"good for man and beast"—applied externally with friction might have improved his manners without dwarfing his play-impulse, but none of us, perfect as we regard ourselves, are so much what we have as what we do, nor are we guided so much by what we know as by what we feel. He felt the need of a little game,—a contest, and unwise or improper as his choice may have been, he's a better boy for having chosen. A fourteen-year-old street urchin dressed in 20th Century frills and furbelows may be an appropriate object as a source of immediate pride to exhibit at Mamma's Wednesdays, but such a spectacle is scarcely pregnant with future hope. Civilization of to-day offers little opportunity for free development of play-pleasure. Such opportunity should be provided, for surely the love of enjoyment is stronger than the love of vice, and if given an equal chance will strangle the lust for it.

From the grist of the public school the rank and file of the next generation must come; the small percentage who reach the institutions of higher learning find prepared for them organized play; but the great army of our citizenship is still restricted to the use of back alleys and vacant lots, where they remain conditioned by walls of brick and stone or the squalor of briars and ash-heaps.

There is a law in England that requires every public school to provide thirty square feet of unobstructed play-ground for each child in attendance—contrast this with the public schools of your own town or city. In books and laboratories we supply indispensable equipment for intellectual training, but do we adjust the work to the needs and abilities of the child? Why, we have reached the point of enlarging upon the principle of "research" and "modern study" even in the high school. Children are set about to find the new life before they have found the old—the one they must live. The very term research has been surrounded so long by a halo that few tarry to interpret its meaning. We seem to regard it as some new principle just discovered, the patent-rights held by a favored few who are profoundly changing the character of education. We seem to think of it as something of which we have been heretofore entirely ignorant. Why, mankind has bathed in, eaten the bread of, and dreamed "research" since the first man: for was not Adam engaged in research for Universal Knowledge when he bit that sour apple?

Beside provision of adequate play-grounds for our schools we should provide adequate instruction in the child's activities. We do not build and equip laboratories in which to turn the student loose to browse. We direct his studies and experiments in a systematic manner. We put in charge a devoted and especially trained teacher. In the same way we should direct the activities of the play-ground. We should secure one trained for this specific purpose—one who knows how to enter into and direct the play-impulse all the way from making sand pies to playing our national game of baseball. To be sure for purposes of economy it may be possible for this specialist to render other service in the curriculum, but it should always be held secondary to his real work. He should be employed to direct the play-ground and perhaps allowed to teach Algebra, but never employed to teach Algebra and permitted to instruct in the games.

We claim no originality in pleading for play-grounds—and play-grounds properly directed; for the principle has been established in reformatories, prisons and some industrial schools. Is it not possible for the members of this Association to bring the matter before the

school boards of your home cities and towns? Is it not of sufficient interest to the claims of public health and closely enough related to sanitation and medicine to secure the support of this organization?

We do not offer the play-impulse as a panacea for all the ills of life, but as a principle which promises much, yet a principle which in a too serious and material life is likely to be neglected or over-looked altogether.

When equilibrium in civilized development is once attained; when every man who escapes accident may reasonably hope for a ripe old age; when death shall come from a universal cause, it will be when all who enter the world shall find prepared for them the opportunity and equipment for the exercise of the play-impulse; when he who reaches maturity will continue by choice and as a matter of course, the pleasures of play. It will be when he who has entered upon life's duties, will be girded about with the weapons of play and sheet-armored with a constitution inherited from those who believed in play.

With these weapons he will be able to subdue whatever enemies challenge his advancement; with this armor he can defy all lurking dangers.

TREATMENT OF ANGINA PECTORIS WITH REPORT OF SOME CASES.

By ALEXANDER G. BROWN, Jr., M. D., Richmond, Va.
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For more than a century clinicians have been discussing the pathogenesis of angina pectoris. Many of the old masters in medicine exhausted their rhetorical powers in picturing its tragic behavior and in describing its deadly course. If one reviews the literature of the subject in search of the prevailing explanation of that assembly of symptoms known as angina pectoris, it will be found that the old writers can be divided into three groups: those believing it to be due to spasm of the heart; those contending that it is a neurosis; and those adhering to the view that it is the result of an interruption of the normal blood supply.

Even latter day clinicians are unable to bring the wide display of the symptoms, manifested by this disease, under one pathogenetic explanation. Under the theory of "neuralgic affection," the cases undoubtedly angina pectoris, sine dolore, cannot be explained. The theory of "neurotic origin" cannot be consonant with an accepted therapeutic law, prevalent and effective in its treatment. The successful effect of vaso-dilators discredit the neurotic theory as a causative factor. That the cause of angina pectoris is due to spasm of the myocardium can be refuted by observing the clinical impossibility of having, during its occurrence, anything like an orderly systole.

Post mortem findings in angina pectoris have been unsatisfactory. Some persons dying of the disease have shown no pathologic change. It must be, however, conceded that in many cases displaying this syndrome there are coincident structural changes such as valvular lesions, myocardial degeneration, aortitis, adherent pericarditis and arterio-sclerosis of the coronary arteries. Then we must confess that there may or may not be morbid anatomy.

This term "angina pectoris" must be clearly defined before proceeding. It means more than originally intended by it. It covers all the cases, of severe and tragic nature, as well as those embraced under the description of angina sine dolore. It includes also those cases formerly called pseudoangina. To these several types of the symptom complex we ascribe but one cause, manifesting itself in major and minor degrees, thus displaying under varying conditions modified symptoms.

The heart is supplied with a very complex nerve outfit. In its myocardium lies an exquisitely sensitive sensory nerve structure, and the nerves of the heart are sensible of the most abridged restriction of normal blood supply. The constriction of the arteries causes pain according to the degree of ischaemia produced thereby. An impoverished nerve aches: the organ, performing its systolic work under a condition of constricted arterial blood, suffers.

This suffering assumes the proportions of agony according to the degree of obstruction and spasm in the arterial structure. Huchard teaches the idea that this ischaemic myocardium starts stimili by sensory route, which finally reach the medulla whence they are switched back to the intercostals and brachial plexus, emitting constricting pain in the precordium and down the left arm. All cases of pseudoangina, whether they come under the arbitrary division, neurotic, toxic, or reflex, which Osler gave them, can be harmonized and explained on the basis of embarrassed coronary circulation. We must discard the idea that systemic

arteriosclerosis is essential before this condition of the coronary arteries can exist. No longer must we consider the state of the radial and temporal arteries the index of the general internal arterial structure. Nor can we rely upon the reading of the sphygmomanometer as a final and sure means of determining the degree of arterial degeneration in the tunics of blood vessels, for we know that blood vessels are far more susceptible of local manifestation than was formerly thought. We now know that the manifestation of intermittent claudication is but the exhibition in a local vessel of its degree of constriction. The condition of the coronaries, the state of their irritation, the degree of their sclerosis, their state of hypertonus, the condition prevailing in the aorta at their mouth, the degree and nature of the degeneration in the myocardium, the associated cardiac organic lesions, the amount of arterial degeneration of the systemic arterials, the state of the general nervous system, the action of the normal reflex functions of the body, the nature and the extent of intoxication of the blood, these and other factors act to modify and change the varying intensity of this syndrome from what is known as pseudoangina to the severe and alarming type known as angina vera.

Case 1.—White man, age sixty-four years, principal in public school, height five feet ten inches, being slender, erect, slow, dignified in movement. Occupation being sedentary, he has spent his life in literary and scholastic pursuits. Of active mental habit, with a well-poised and thoroughly controlled emotional nature, profoundly impressed by a long life of religious thought and conduct, the patient has been active and efficient through a long term of years. Two facts must be noted in considering the case: First, he has been for many years addicted to the habit of chewing tobacco; second, he has been, for many years, more or less a large and extravagant eater.

Patient was first seen January 19th, 1902; was found suffering great pain over precordium, a sense of constriction and oppression of the chest, angor animi, an alarmed expression, pain darting down left arm, numbness of fingers of left hand, difficulty of breathing and an attitude of one laboring under the most distressing conditions. Diagnosis was promptly made out as angina pectoris (vera). Use of amyl nitrite, local counter irritation, and active cathartic secured relief from the agonizing symptoms. For a number of days patient complained of the oppression and constriction over the chest. On February 12th, 1902, patient had another sudden attack, milder as to the pain, but more serious as to the sense of impending dissolution, in a mind known to be so generally in a state of equanimity. Like treatment secured relief. On March 4th, 1902, patient suffered another attack while at the supper table. While the pain seemed not so intense as on the former occasions, yet the excitement produced by the return of the trouble, with the sense of constriction on the chest, was most marked. During the months of March and April, the patient suffered, sine dolore; the pain and numbness in the arm reappearing upon exercise. In May, 1902, the patient experienced discomfort, but for the third time was allowed to return to his duties. Being seen from time to time during succeeding months, and kept under strict orders in the use of medicine and food, the patient, becoming discouraged at the slightest return of the trouble resulting from some infraction of the rules laid down for his government, left my care and was not seen by me until October 14th, 1905, when I found him in the throes of another attack of angina vera. This attack had all of the intense pain of the first one. From this time on he has been under my constant supervision. His last attack occurred on February 2nd, 1906, while in school. For months after this paroxysm he was conscious of some unpleasant sensations over the precordium, which, upon exercise, or imprudent eating, assumed the degree of pseudo-angina, but, gradually, these discomforts subsided and the patient has not, since that date, had a distinct attack of angina pectoris.

Case 2.—J. E. B., age 74, retired merchant and office-holder, height five feet seven inches, weight, 200 pounds; habits good for fifty years, had no serious illness for twenty years; gives history of relief from active service in the field during Civil War on account of some heart trouble; was a hospital steward in Confederate service; has been an industrious man since the war; during the last ten years has held municipal position consisting in office work mainly.

Present illness began three years ago with periodic attacks which were characterized by retrosternal pain, precordial oppression, dizziness, mental excitement, polyuria, and nausea.

During this period he has had a number of such attacks, each of which yielded to treatment. On February 7th of this year, the patient was seized with a hard attack displaying all the typical symptoms of angina pectoris; fear of impending death, agonizing pain in precordium, aching down the left arm, rapidity of the pulse and symptoms of acute dilatation of the heart. From this time up to June 1st this patient has had repeated attacks of angina pectoris varying in intensity from "angina vera" to "angina sine dolore." In a number of these attacks imminent death seemed to threaten. During the last few weeks of the time the treatment has become effective and the attacks have almost entirely ceased. During the whole period he has had at hand emergency remedies for the immediate control of the pain and cardiac distress and this has no doubt prevented fatal outcome in some of the more alarming seizures.

Case 3.—Mrs. T., age 40, multipara, menses regular and normal; history of indigestion of long duration, no serious illness since birth of last child seven years ago, been annoyed by great nervousness and palpitation of heart.

I was sent for to attend her for a great pain in chest, extreme nervousness, mental anxiety. I found her in an attack of angina pectoris. The pain was intense over the precordium, with great aching in the left arm and under the shoulder blade on the left side. The heart showed systolic mitral murmur, displacement of apex beat to left and diminished tonicity and contractility in its ventricular action. The pulse was intermittent and tachy-arrhythmic and of small volume. There were no signs of arterio-sclerosis, the palpable arteries were soft and the tension was 125 mm Hg. Examination of the neck revealed goitre. Bromide of potash and choral hydrate caused relief to the painful symptoms while spartein sulphate effected tonicity to the ventricular systole. She was attacked by like pain at intervals during the subsequent six weeks and each of these attacks yielded to the treatment. During the interval she was given iodothyrine and strychnine nitrate. The effect of this line of treatment has been most satisfactory as she reports comparative comfort from all heart symptoms and nervousness. She has shown marked improvement in the thyroid tumor. Her digestive disturbance has been relieved.

Case 4.—Mr. J. T. C., age 45 years, referred by Dr. B. L. Hillsman, of Richmond, who first saw the patient in the throes of a severe angina pectoris syndrome. He was later seen by me with Dr. Hillsman at the patient's home. Suffering some pain then, he was much more comfortable than when seen by Dr. Hillsman at his tobacco factory in the early morning hours. History was that of good health since childhood, but disclosed habits of alcohol, tobacco, and heavy eating. Examination showed stout physique; no valvular lesion; aortic second sound much accentuated; and the pulse hard, tense, bounding, and rapid. Pain was great over the precordium, through the chest and under the left shoulder blade with great aching in the middle inner side of left arm. He was given a strong hepatic purgative and a mixture containing sodium nitrite, potassium bromide, and a small amount of spartein sulphate. He was directed to maintain absolute rest. The severe symptoms promptly left him. He has felt no illness whatever since the treatment was begun except at first when the slightest exercise excited the pain in the precordium. His blood pressure on the third day after the attack was 155 mm Hg., and now under this regimen he registers 130 mm Hg. He feels well and is living comfortably upon the restricted diet, total abstinence, and the interdiction of the use of tobacco and excessive exercise.

Case 5.—Rev. Mr. C., age 66, six feet, weight 209 pounds, non-smoker, no alcoholic history, but heavy eater. When a child had rheumatism; all his life has felt some disturbance of the heart but considered it a symptom of indigestion which he had had from time to time. In the late winter prior to his coming under my care had had an attack of influenza which had greatly debilitated him. Came to see me at my office suffering with constant pain over the heart with numbness in the left hand and great pain in the middle of the arm. The pain was described as being very intense and sickening to him. Upon examination the heart was found very much enlarged, with systolic and diastolic murmur heard over the aortic area and up the great vessels; in fact it could be heard over the whole precordium. I diagnosed aortic disease; stenosis and regurgitation of aortic valves; and coronary disease. He was given nitroglycerin and his splanchnic circulation and nephritic circulation were acted upon with hepatic and diuretic agents while

the heart was restrained by the use of bromide of sodium and sustained by strychnine nitrate. When first seen he was in a state of extreme distress. The relief, now covering a period of three years, has been most satisfactory and he is now nearing his 70th year doing light work and enjoying comparative comfort from his cardiac and vascular lesions.

Case 6.—Rev. Mr. K., was seen three years ago (Jan., 1906), in an attack of angina pectoris. While his symptoms were not so distressing in point of pain, yet there were signs of cardiac oppression, sense of impending death, great mental unrest and excitement, and evident dilatation of the myocardium. During this first attack he was very much depressed and showed dypsnoea and weak pulse. At 65 years of age he showed arteriosclerosis in the radial artery. The application of hot packs to the chest and the use of nitroglycerin and strychnine simultaneously, with perfect rest and starvation for twenty-four hours secured for him marked relief and much improvement. He has been threatened with attacks of this character on several occasions since, but prompt application of the hot packs have controlled the condition. This case is now doing full work in the country and is very comfortable.*

Some General Considerations in the Management of Angina Pectoris.

No matter what the degree of pain, whether it fall under the heading of angina sine dolore or angina vera, all cases of angina pectoris should be considered as grave pathologic conditions, often fatal instantaneously. All cases showing precordial distress after the fifth decade should be viewed with more or less alarm and should be placed in the angina class. I know of no group of symptoms that should receive more careful consideration from the medical attendant than those centering about the left breast and connected with cardiac phenomena. Certainly there are no groups of symptoms more frequently associated with unexpected and startling death; however, no class of cases approach so near fatal termination, sometimes to be restored to fairly comfortable lives. The attack is dangerous, but cases that come to relief should take the attack as a warning of a serious cardiac malady, and should interpret the attack as a reason for more or less medical treatment and supervision for such time as needed to reduce to a minimum that group of conditions that appear in the anginoid syndrome. I believe that all these cases, once showing the symptoms of angina pectoris, should be carefully managed until the cardiovascular and other conditions connected therewith can be considered to be well reduced to normal. My experience in the treatment of this and other cardiac and vascular abnormalities leads me to wonder sometimes at the sustained improvement in these diseased conditions and to marvel at the brilliant results achieved in cases apparently well in the borderland of invalidism and apparently permanent disability.

It is my uniform custom to emphatically picture to the patient the dangers of this class of symptoms and to clearly point out the grave dangers threatening them. At the same time I place before them the possibilities of greater security against the sudden end when under medical attention.

Therapeutic Considerations.

The attack is to be the first consideration. The medical management of the cases thereafter is the next and important desideratum. The attack in the usual case can be treated with the following agents for relief of pain: chloroform, amyl nitrite, morphine, choral hydrate, bromide potassium or sodium, nitroglycerin, sodium nitrite. Absolute rest in recumbent position, application of hot packs to chest, sipping of a cup of very hot Epsom salts solution. Those cases showing acute dilatation of the myocardium, with or without great pain, should be stimulated by simultaneous use of strychnine, spartein, caffein, camphor, ammonia, and should not be depressed but sustained, depending more upon topical applications and gastrointestinal elimination of possible etiologic factors. Management of cases following an attack deserves far more extended consideration than can be given it at this time, for there are several types of angina that need more or less individual lines of treatment and to follow out the details of such a consideration would take much time. However, I shall direct attention to a few points in the treatment of the several types of this disease. This I can do only in a general way bringing out some of the salient points. For it is equally as

*These reports have been made with an idea to brevity; history, examination data and details of treatment not bearing directly on the point of the case, have been omitted.

true of angina pectoris as of other diseased conditions that each case is a law unto itself.

The cause of the condition should be carefully sought for; the complicating or coincident pathologic states in the body should be clearly interpreted. Upon these premises depends to a great degree the success of the treatment. If either tobacco, alcohol, or over-eating, is the causal agent such factor must be eliminated; if either structural changes at the aortic opening, general arteriosclerosis, or impermeability of the kidneys is the exciting cause, this must be overcome to an adequate degree; if either an infectious disease, gout, or syphilis is the irritating factor it must be reduced to effect permanent relief. Likewise, if the myocardium is in a condition of pronounced degeneration and the walls of the heart in a state of atony and dilatation, if the kidneys are in a state of degeneration, or the lungs passively engorged, either one of these conditions will necessarily have an important bearing upon the treatment of the case; in fact, the failure to recognize any one of these complications and other coincident conditions may mean failure in the treatment.

If the tension is high and the heart sounds are competent but accentuated—especially at the aortic valve—one of two conditions, or both, will in all probability have to be dealt with—namely, arteriosclerosis, or nephritis. The interdiction of the exciting cause and the use in these cases of elaterin in one-tenth grain doses until the intestinal discharges become copious and the use of the spirits of nitroglycerin in two-drop doses every four to six hours until the tension is reduced and the permeability of the kidney is obtained, usually, in my hands, bring these cases to the point of comparative easy management. After this, I use the potassium iodide, sodium nitrate, or erythrol nitrite and treat the arteriosclerosis on general principles. If the case occurs in a female at about the climateric, and is associated with a competent heart, I look for phenomena connected with hypothyriodism or hyperthyroidism, or reflex conditions in the pelvis, or specific disease and direct treatment for relief of such conditions. If the case is associated with valvular lesion, arteriosclerosis and visceral degeneration, a trinity of conditions not infrequently found in angina pectoris, the treatment should be directed to relieve the obstruction in the visceral circulation and to prevent, if it has not already occurred, myocardial dilatation. If compensation is broken and the venous pulse is evident digitalis is the sheet anchor. Not invariably productive of brilliant results but, in one or another of its forms, digitalis stands out here as the great remedy. This, of course, is to be used cautiously. At the same time the general circulation should be relieved of high pressure by the use of nitrite of sodium or nitroglycerin. The maintenance of active catharsis is important, but should not be carried to a depressing degree.

If the case is one showing no marked cardiac vascular, or visceral lesion, and not attributable to glands of internal secretion, I look for the main cause in the gastrointestinal tract. In these cases a strict diet, a limitation as to quantity and a selection of the kind of food used, will in all probability, after a sustained observation and management, show marked improvement and come to permanent relief. These patients I place upon a skimmed milk diet with or without lime water. I order a saline purge in the early morning usually in the form of magnesia-citrate. I keep them on the milk diet for some time. When the precordial pain is relieved and not excited by more or less exercise, I prescribe a more liberal diet.

There are cases, varying in nature from those cited, that require individual consideration, but the limits of this paper, already longer than at first intended, preclude their consideration.

RHEUMATIC FEVER.*

By A. J. BURKHOLDER, M. D., Mt. Sidney, Va.

Definition:—A specific disease caused by the presence of the "diplococcus rheumaticus" and its toxins—by which varied and numerous manifestations are produced. In dealing with this subject we do not consider it necessary to resort to a text-book history of this disease, with which every practitioner is more or less familiar.

Early in the seventeenth century, the name rheumatism was given to the acute arthritis so commonly met with, and ever since every articular pain has been called rheumatism. Many theories have been advanced as to the cause, but, as yet, nothing appears so plausible as the germ theory. This formic acid thrower has been isolated, cultured and by intravenous inoculation the characteristic lesions have been

*Read before the Augusta County Medical Society May 5, 1909.

produced and re-produced with a marked degree of constancy.

In taking the stand that rheumatic fever is an infective disease produced by a specific micro-organism, we realize that such an assertion will provoke a general discussion, and possibly some criticism; if so we will have accomplished something toward placing this disorder upon the list of those maladies classed as specific.

Pathology:—The morbid lesions of tissues affected differ in degree depending upon severity, and are due chiefly to the local effect of the bacteria and not to the toxins only, as has been suggested by some investigators. However, degeneration of the cardiac muscle and the convoluted tubules of the kidneys is now believed to be due directly to the prolonged action of the toxin.

That certain changes in the nervous tissue are produced by the same cause remains to be proven. Yet the evidence is very strong in support of this theory, especially since the diplococcus has been found in the pia-mater and brain. The failure to discover bacteria in the early exudations has set up and arbitrary claim which is not true in practice, and has contributed largely to the disbelief in the bacterial origin of rheumatic fever.

When the diplococci escape from the capillaries they invade the sub-endothelial tissues, and the endothelium effectually bars their entrance into the serous cavity until later, in severe attacks, after the endothelium has been destroyed. Even at this stage it is difficult to obtain the diplococci before their destruction by leukocytes.

Clinically, we find three types of rheumatism, not distinctly separated, yet sufficiently so to establish a classification—the simple, fibroid and malignant.

In the first and most frequent type, the tissue resistance limits the affection in many cases to articular pain with slight swelling which is of brief duration. On the other hand, in individuals of poor resistance the infection is more severe and causes death of a portion of the tissue involved which is replaced by scar tissue. This condition is frequently seen in the thickened mitral valve after an attack of simple endocarditis. Dilatation and frequently rupture of the blood capillaries occur, with marked swelling of the adjacent connective tissue, resulting in necrosis if severe, and, if the sub-endothelial becomes thus involved, an exudation results which becomes sero-fibrinous.

In the second type, the persistent or prolonged nature of the attack involving the periarticular structure, is the chief distinction, and leaves but little doubt concerning the prognosis.

The malignant form is characterized by cardio-vascular changes, dilatation of the heart, endocarditis, pericarditis, phlebitis, arteritis and also a rapid diminution in the number of red corpuscles.

EPIDEMIC PNEUMONIA, WITH A FEW SUGGESTIONS ON MANAGEMENT.*

By STUART MANN, M. D., Moyock, N. C.

It is not my object to enter into the etiology, pathology and symptomatology of this most dreaded disease—epidemic pneumonia—but to present a brief synopsis of my cases taken collectively. To present these cases in detail would be irksome and consume too much valuable time.

During the early spring, there came under my care seventeen well defined cases of pneumonia varying in type from lobar, lobular, pleuro-pneumonia to migratory. In four of these cases, there was abscess formation, necessarily complicating and greatly prolonging the disease. Three of these cases formed fistulous connections with a bronchus and ruptured spontaneously—thus becoming relieved effectually. The remaining case of abscess formation followed lobar pneumonia. This case, with irregular fever, profuse sweats, especially at night, and spasmodic cough, which indicated a disposition for Nature to relieve herself, which was only partially done, I afterwards referred to the hospital for drainage. This case I will refer to later. I recall one case which, at first, presented all indications of lobar pneumonia, congested area well defined, etc., the remaining lung being comparatively clear. Within twenty-four hours there was a general catharral condition of both lungs defining the migratory variety. This case was an alcoholic, age fifty-seven. It is noticeable in all cases of bad personal history that there is some special interruption in the crisis.

A similar condition occurred in case N, age fifty-eight, who had been a regular drinker all

*Read before the North Carolina Medical Society, at Asheville, June, 1909.

his life, was taken in the usual way with lobar pneumonia, violently ill from the beginning, reached the usual crisis by the ninth day; temperature, pulse, respiration and general condition good with the exception of some insomnia. Suddenly the nervous symptoms became augmented; delirium of the maniacal type supervened, so that a constant attendant was required to assist the nurse and succeeded in causing this patient to sleep for twenty-four hours. There was decided improvement and the case made a tedious but good recovery.

In still another case of lobar pneumonia which was running the usual course, there was on the sixth day complete occlusion of the bile duct, and phlegmonous tonsilitis. This complication I regarded as extremely grave; however resolution took place and the pneumonia cleared up thoroughly and effectually. Hepatic and gastric irritation developed a most obstinate case of hiccough; it was necessary to control this with anodynes.

The order in which my cases occurred was as follows: In Family P——, of ten exposed, seven contracted the disease. In Family C——, of eight exposed, four contracted the disease. In Family R——, of six exposed, two contracted the disease. In Family R——, of five exposed, two contracted the disease. Beside these fourteen cases, the remaining three cases occurred independently; there was no case of re-infection that I know of. All except two who described the lobular or catarrhal form were under twelve years of age, and the physical signs in some of these cases for a time were frequently indefinite—being in some instances of secondary origin which necessarily reduced the vital forces before an absolute diagnosis could be made. It might be worthy of note that there was considerable gastric and abdominal disturbance, requiring, in several instances, intestinal antiseptics.

The cases of lobar pneumonia of primary origin have less complications, and run a more favorable course. Therefore in the event of endemic or epidemic pneumoina, it is well to institute a provisional quarantine and a prophylactic treatment. In the above families along this line the plan was to have all neglected colds attended to at once with mouth and nasal antiseptics and, if practicable, isolation. I am frank to state if this had not been insisted upon I believe there would have been other infections.

The family physician should be watchful and cautious in this respect. Some of the leading textbooks give vivid and able descriptions of this dangerous disease yet they do not insist on quarantine.

We have no specific treatment for pneumonia. I know of no condition which I feel more incapable of treating than when I realize a stubborn case of pneumonia.

Referring to the case of lobar pneumonia above, which was followed with empyema, I have recently—since the preparation of this report—made a careful study of the case, have aspirated in three separate places, but my results were unsatisfactory. Pus is indicated by septic phenomena, high and irregular fever, sweats, chills, pallor and leukocytosis. I have advised resection and drainage which will be necessary; yet in addition to the above, this case will do well for a few weeks—appetite fair; temperature normal, cardiac action fair; respirator accelerated elimination. Tonics and alteratives have had a fair show together with diet.

Treatment.

General Management.—The room should be well aired and kept at a temperature of about 68 degrees F. In all cases it is well to have the bed raised to enable the nurse and phsician to conveniently get at the patient. All of the linen should be removed from the patient except the nightshirt and this should open all the way down the front, thus facilitating convenience for counter irritants and the application of the chest binder. The sputum should be disinfected or burned. In all cases of severe pneumonia I would insist on securing a trained nurse. This may seem unnecessary in some cases, yet when we consider the outcome of poorly nursed cases it is invariably satisfactory in the end.

During this recent epidemic it required the services of three trained nurses, without whom, I might have lost several of my cases; for when we have serious complications like cardiac depression or pulmonary edema, it is necessary to have a physician or a trained nurse in *constant* attendance.

Diet should be guarded carefully. It should be liquid and of the most nutritious character. Milk is an ideal food if properly digested. Many times, however, this is decidedly irritating, especially when there is fermentation. Albumenized water or albumenized grape juice,

broths, scraped beef or beef juice are useful. Alcohol has considerable food value, but should not be administered at the beginning unless specially indicated.

Fever.—This should be considered very carefully. In the beginning, if the patient is plethoric, with full bounding pulse, I usually give Norwood's tincture of veratrum viride, pushed to physiological effect. If the desired results are not obtained I do not continue its use. I have seen some happy results in the beginning of pneumonia by this treatment; however I never give it later than the second day. In cases where the temperature is high, it is far better to use hydro-therapy, followed with alcohol rub, and never prescribe antipyretics, unless in exceptional cases when the condition should be watched by a competent nurse. The main object is to support the vital forces till the crisis has passed.

Medicines.—Usually in the beginning it is well to act on the portal system with mild chloride of mercury and watch the elimination frequently, especially if there is any disposition to fermentation. In several of my cases it was necessary to use salol and turpentine or the sulpho-carbolates.

Stimulants.—When the first sound of the heart becomes less distinct and the pulmonic second sound loses its accentuated character or marked nervousness I usually order alcohol combined with nourishment, and strychnia with carbonate of creosote, every four hours. If this does not suffice I give digitalin, with or without strychnia, and where the urinal secretion is scant I also combine spartein in grain doses. If the above is not satisfactory and there is especial cardiac depression and pulmonary edema, I give adrenalin-chloride (P. D. and Co.), ten to twenty drops hypodermically to be repeated as indicated. I wish to especially mention that this is a most excellent remedy as my results with it have been uniform in equalizing the circulation and relieving the edema.

Pardon the digression, but in case of shock with pulmonary hemorrhage, in which the heart is "running away with itself" so to speak, acting like an engine without a governor, I know of nothing that equals the adrenalin-chloride.

Pain and Cough.—I always aim to control this, as far as possible, with a neat-fitting cotton jacket. When necessary, I give codeine or heroin, but under no circumstances do I give morphia where there is any cardiac depression with edema. In pleuro-pneumonia, I frequently apply an ordinary fly blister, which usually relieves the pain and gives a "nice sore" to treat.

Insomnia.—I prefer two grains of veronal, three of sulphonal, and one-tenth grain of cascarine. I do not like hyoscine on account of its drying effect of the respiratory secretions, and increasing dyspnea. For delayed resolution, I frequently use ichthyol, iodine and belladonna by unction; and, if the stomach is retentive, prescribe the following mixture, in suitable doses, every four hours:

Pot. iodide, syrup of ferric iodide, syrup of sarsap. comp., ess. pepsin.

During the stage of convalescence, the lighter forms of solid food may be allowed, with strychnia, iron, arsenic and quinine. As far as practicable keep patient in open air, and instruct him to breathe deeply, especially if the case has been of a tedious character.

Of the seventeen cases treated along the line mentioned my results were gratifying. The case which developed empyema has improved, yet will be operated on.

THE STATE'S DUTY IN THE FIGHT AGAINST INFECTIOUS AND CONTAGIOUS DISEASES.*

By J. W. HALFORD, M. D., Chalybeate Springs, N. C.

In the course of his presidential address at the 54th annual meeting of the North Carolina Medical Society, Dr. Booth said: "He (the physician) no longer confines himself to the combat of a single case of sickness at the bedside; it is his duty to study its cause, trace it to its sources, and stamp it out of existence. To do this it is often necessary to call upon State and municipal authorities for aid. Those in power are, as a rule, either ignorant or indifferent." The closing sentence of this statement of facts has been most forcibly impressed upon me during a service of nearly three years as County Superintendent of Health. However, the indifference is not confined to the "authorities," for a great many physicians refuse to cooperate with the local health officer in his efforts at preventive medicine.

There is a remedy for this indifference or

*Read before the fifty-sixth annual meeting of the Medical Society of the State of North Carolina, held at Asheville, N. C., June 15-17, 1909.

ignorance and the remedy is with our law-makers. They must, by statutory enactment, provide the agent or agency to carry out Dr. Booth's demand that we trace disease to its sources, for the great majority of physicians have not the time, and a still smaller number have the disposition, to trace a given disease to its source. They usually content themselves with an effort at suppression of the case presented. This agent or agency should be a law requiring physicians to immediately report every case of infectious or contagious disease to the county superintendent of health, as is done at present in the case of scarlatina, rubeola and diphtheria and a few other diseases. Few physicians report new cases of tuberculosis, and none, so far as I am informed, report gonorrhœa or syphilis. This law should provide that each county shall employ a competent physician as superintendent of health, who must devote his entire time to the work of his office. In order to remove this office from partisan politics the respective county medical society should nominate and the governor appoint.

It should be the duty of our law-makers, the State, to require the county superintendent of health to: First, keep a record of and visit every case of tuberculosis, give general directions as to hygiene and proper living and the manner in which the disease is transmitted, and to give gratuitous treatment to the indigent. This would be the first step toward the county sanitarium for the treatment of tuberculosis. Secondly, this law should require the respective counties to pay a sufficient salary to attract men of ability.

Another class of diseases which the State does not require physicians to report, and which, in the writer's opinion, is as great a menace to the public health as tuberculosis, is venereal diseases.

If any disease has entailed greater suffering and blighted more lives than syphilis it is gonorrhœa. Seek the gynecologist for information regarding the barren and crippled women as a result of this loathsome disease. The neurologists and keepers of insane asylums write the final history of syphilitics. Still the State makes no effort at suppression of these diseases. The State may, by mandatory laws, attempt to protect the child from the exanthemata, but the law is yet to be written which would make an effort to protect the innocent babe from the dire effects of inherited syphilis. It is the State's duty to require every physician who gives aid to this class of sufferers to report the matter to the county superintendent of health, together with the name of the author of the trouble. A list of these unfortunates should be furnished the register of deeds, or other proper county officer, and a marriage license be denied all who can not furnish a certificate from a reputable physician showing he had had proper treatment and was cured. All cases of a public nature should be isolated or quarantined during the active state and treated at public expense. A law regulating the social evil will come in the remote future.

Hydrophobia is a disgrace to our civilization and still during the past year the Hygienic Laboratory at Raleigh has given prophylactic treatment to about one hundred exposed persons. A tax on dogs would help to reduce this disease, but a law requiring owners to muzzle dogs would entirely do away with this dangerous malady.

The policy of employing men to carry on the fight against the class of disease here mentioned has received the indorsement of some of our most gifted minds. In 1906, in his presidential address, at a meeting of the "Conference of the State and Provincial Boards of Health of North America," Dr. R. H. Lewis advocated the employment of teachers to travel the State lecturing, scattering literature, and organizing societies to fight tuberculosis, which he considers the greatest problem confronting the sanitarian. Are not physicians the most competent teachers, and why not entrust this work to one man in each county—the superintendent of health?

In the course of a message to the General Assembly of New York, Governor Hughes, in speaking of tuberculosis, said: "Provision should be made for notification and complete registration of cases and for the dissemination of necessary information. There should be suitable appropriations made to permit of systematic effort under the direction of the commissioner of health."

If our law-makers were broad-gauged men like Doctors Booth and Lewis and Governor Hughes, the last of the present generation would witness the final extinction of tuberculosis. All the laws of the land affecting the public health are the result of the unselfish, self-sacrificing effort of the medical profession, and this profession must continue to direct the law-makers.

EXTERNAL ACCIDENTAL HEMORRHAGE IN A CASE OF NORMALLY SITUATED PLACENTA.

By OTIS MARSHALL, M. D., Crewe, Va.

I want to report a case occurring in my practice which may be of interest. By accidental hemorrhage, I mean hemorrhage due to the detachment of a normally seated placenta.

During February I was called in to a supposed case of premature labor. I found a multipara with a previously good history. Examination showed slight contractions of uterus and pains far apart. Cervix patulous but very little dilatation. She was told that she was not in true labor and that she would be seen later in the day. Three hours later I was called back. Found patient very nervous and her mind fully made up that she was going to expel the fetus. She had assumed the knee-chest position and was forcibly bearing down. I went over to quiet her but at this time I noticed a severe hemorrhage from the vagina. Hurried examination showed hemorrhage from within uterus and cervix dilated sufficient to put in one finger. Placenta could not be felt and membranes were intact. In the mean time she lost considerable blood.

The treatment consisted in two things: first, checking of hemorrhage; second, induction of labor. If the uterus is healthy and we prevent the blood, which is being poured out from behind the placenta, from escaping out of the uterus the pressure inside will become equal to the blood pressure and hemorrhage will cease. We can be assured that the uterus is healthy if the physical look of hemorrhage is good and the fact of its being external. The vagina was immediately tightly plugged with tampons. This did two things:—practically it stopped hemorrhage, and brought on labor. This coming on gradually did not increase shock from which patient was already suffering, but on the contrary, allowed her time to rally from the collapse caused by loss of blood. The patient was left in bed for two hours. Then with assistance from another physician she was given an anæsthetic. Packing was removed and cervix found to be dilated the size of a standard watch. Further dilatation was rapidly made with hand, and the membranes ruptured. Forceps were applied, and fetus delivered but soon died. Placenta was taken and uterus massaged. Patient put to bed and given a dose of ergot (hypodermically). Later gave stimulants and small doses of ergot. Patient recovered in the usual time, about two weeks.

Book Notices.

Tuberculosis—a Preventable and Curable Disease. By S. ADOLPHUS KNOPF, M. D., Professor of Phthisio-Therapy, New York Post Graduate Medical School and Hospital, etc. New York. Moffat, Yard & Co. 1909. Small 8vo. 394 pages. Cloth, $2 net; by mail, 15 cents extra.

This book on "Modern Methods for Solution of the Tuberculosis Problem," if generally and intelligently read by *people* as well as doctors will prove of more benefit in the prevention and treatment of tuberculosis than any one book we know of. It is not that there is any special attempt at originality; but the established facts as brought out during the past few years, are presented in a systematic, convincing form, and in a style that is easily comprehended. Illustrations are profusely introduced, which well bring out the points desired. As a part of the treatment of tuberculosis, it would be well for the attending physician to recommend the careful reading of this book to any intelligent patient, and the following out of the general hygienic directions laid down—leaving it to the medical attendant to give specific directions, etc.

Medical and Minor Surgical Diseases of Women. By SAMUEL LILE, M. D., Surgeon-in-Chief to St. Andrews' Home, etc., Lynchburg, Va. Illustrated. Baltimore. Southern Medical Publishing Co. 1909. 8vo. 314 pages. Cloth, $3.50, net; half-Morocco, $5.00.

Based on the principle that "it is the little things that make up life," the author has collected into this volume a large number of plain, practical points of everyday utility in the medical and minor surgical treatment of diseases of women. No claims to originality are made, but simply the suggestions that have come out of some years of observation and experience in practice along the lines indicated by the title. The value of medicinal agents is recognized, the use of pessaries, etc., advocated, the most serviceable method of examination of the female pelvic contents described, etc. Special importance in each chapter is given diagnosis and treatment. The author, himself a surgeon of wide repute, deserves the thanks of the profes-

sion for combining in book form points that his experience show do not warrant radical extirpations, etc. It is a good companion book for a standard work on surgical gynecology. A few typographical errors have crept in, such as "acites" for "ascites," etc. But the book is to be unreservedly commended to the general practitioner. It is profusely illustrated.

Legal Medicine and Toxicology. By R. L. EMERSON, A. B., M. D., Member Massachusetts Medico-Legal Society. New York and London. D. Appelton & Co. 1909. 8vo. 593 pages. Cloth, $5.00 net.

This work—long needed—deals with the usual features required of the medical witness in courts, and toxicology. In addition about 180 pages are given to a statement of the State laws on the practice of medicine in them, compiled from the latest authorities. These laws are given according to the alphabetical arrangement of the States—including the District of Columbia and Hawaii. The book is illustrated by 8 full page plates showing the effects of poisoning by arsenic, Paris-green, mercury, phosphorus, carbolic acid, potassium cyanide, oxalic acid, and spectra of the blood. After a description of the effects of many poisons, the means of detection are stated, and very often paragraphs as to treatment are given. Part I deals with sudden deaths, medico-legal post-mortem examinations, deaths by asphyxia, hanging, strangulation, suffocation, drowning, cold, heat, electricity, starvation, etc. In short, it deals with all those matters which interest coroners, and as a rtference book for the general practitioner about medico-legal matters, it has no superior in a one volume treatise. Beside the full table of contents, the book is well indexed.

Editorial.

Specialists and Specialties.

One of the dangers of the day is that of the division of the practice of medicine into so-called "specialties"—not, perhaps, that such a thing is not really demanded because of the great volume of information which has been brought to light by modern study and investigation, but because of some of those who too hastily announce themselves as "specialists," as if medicine were altogether a mechanical trade or profession. The true groundwork of every specialty in medicine should be a broad education in the principles of general practice —whether as a physician or surgeon.

Time and again, in a lengthy experience, have we been brought to recognize some very absurd errors in diagnosis and consequent prescriptions by so-called specialists because of their too contracted view of the nature of the disease before them. So that prescriptions are limited too entirely to the condition which leads the patient to think he should place himself wholly under the care of a "specialist." Oftentimes, indeed, is the particular symptom which sends the patient to the "specialist" only one of the several of a general condition; and the "specialist" forthwith claims him as a patient for his consideration alone, and depends solely on local treatment—sooner or later to find himself non-successful as to results.

We maintain that the true specialist should be the highest type of the physician or surgeon. In many cases, he should not retain the patient at all, but should return him to the family doctor, after he has recognized that the particular condition is dependent upon disease of other parts or organs not included in his specialty. Tinnitus aurium, for example, may be due entirely to disturbance of functions of some of the internal organs; blurring of sight to some kidney disease; menstrual and ovarian disorders to some general conditions, etc.—not demanding retention by the otologist, the ophthalmologist, the gynecologist, etc. While in many cases, the true specialist may be consulted about such cases, so as to satisfy one's self that the disease in hand is not strictly local, that specialist, after proper investigatioon and finding that it is not one that clearly belongs to him, should as generously return it to the family practitioner with proper advice.

We are constantly hearing it as a common complaint that it is a dangerous thing to one's general practice for him to refer a case to a specialist, lest the latter retains the patient as his own, treating him month after month without benefit, yet always announcing improvement—especially if the patient be of the well-to-do classs. So that soon we hear of such a patient having his or her own specialist in ophthalmology, otology, neurology, gynecology, balneology, electrology, etc. leaving it only to the

general practitioner or family physician to take charge of the case in the final illness.

For laboratory work, we recognize the need of the specialist—whether as a bacteriologist, pathologist, urinologist, microscopist, etc. Such parties have rarely to do more than report their findings, and, as a class, we have never heard complaint against them—as essential as they are to the successful work of the practitioner. Such specialists are not patronized as liberally as they should be.

But for the fledgling of a graduate in medicine, no matter how well versed theoretically, without any practical experience or observation in general medicine or surgery to announce himself as a "specialist" as soon as he leaves college, is all wrong, and results in a very great limitation in his field of usefulness. Such cases remind us of the story about the old quack who professed to know nothing about this or that disease, but he "was h—l on fits."

After one has learned the practice of general medicine or surgery by actual experience, it is all right for him then to branch off, if he chooses, into a specialty suited to him; for he is then in position to recognize the bearing of a given diseased condition which may properly come under care.

Identification Requirement of the Medical Examining Board of Virginia.

The following resolution was adopted at the June, 1909, meeting of the Medical Examining Board:

Resolved, That for identification of applicants for examination, a recent unmounted photograph of each and every applicant, not personally known to any member of the Board, be required, together with his or her autograph verified and attested by the dean of the college of graduation, or by the mayor, clerk, or judge of the county or city in which the applicant resides. This photograph with the necessary endorsements must be presented to the secretary on registration.

In this connection, in response to many inquiries, we would state that the report of the June meeting has not yet been received from the secretary. It will be published as soon as received.

The American Proctologic Society,

At its recent meeting, decided to hold its next annual session June 6-7, 1910, at St. Louis, Mo., with headquarters at the Planter's Hotel. The following were elected officers for the ensuing year: President, Dr. Dwight H. Murray, Syracuse, N. Y.; Vice-President, Dr. T. Chittenden Hill, Boston, Mass.; and Secretary-Treasurer, Dr. Lewis H. Adler, Jr., Philadelphia, Pa. The Executive Council is composed of Dr. Geo. B. Evans, Dayton, O., Chairman, and Drs. Dwight H. Murray, Syracuse, N. Y., Louis J. Hirschman, Detroit, Mich., and Lewis H. Adler, Jr., Philadelphia, Pa. An abstract of the papers read at the Atlantic City meeting will appear in the *Semi-Monthly*.

Individual Drinking Cups, etc., for Public Service.

Whoever has been at all observant must have long ago recognized the propriety, as well as importance of individual cups for drinking purposes in public service. There is no calculating the number of diseases of various kinds that have been communicated by the glass or cup or dipper, used by everybody in cars, depots, etc. The Norfolk and Western Railway Co. is to be specially commended for having adopted the plan of requiring individual drinking cups on its passenger trains. We believe this is the first of the companies to adopt such a measure; but we trust that all other public service corporations will promptly follow the suggestion.

Dr. Walter A. Wells,

Of Washington, D. C., left August 7, for Europe, to attend the International Medical Congress at Budapest, as a delegate from the American Laryngological, Rhinological and Otological Society.

One of the many pleasures in contemplation for the American visitors to this Congress is a visit, with appropriate ceremonies, to a suburban park near Budapest, where stands a statue of George Washington, which was erected by Hungarian countrymen who live in the United States, out of compliment to their adopted country.

Coroners Organize.

The coroners of the various counties and cities of Virginia will hold a meeting in Richmond, September 21-23, 1909, at Murphy's

Hotel, for the purpose of forming a permanent organization, and discussing many plans relating to their work. Special rates have been obtained at the hotels, and it is hoped that many coroners will be in attendance. The committee on reception and arrangements is composed of Dr. Wm. H. Taylor, Richmond; Dr. John W. Broadnax, of Manchester, and H. Gilbert Leigh, of Petersburg.

The United States Civil Service Commission

Announces an examination on September 8, 1909, for male physicians, to fill vacancies in the Indian service. Salary $1,000 per annum. Eligibles to the examination should range from 25 to 55 years of age, and shall be examined in the State or Territory in which they reside. Applicant must show that "he has been actually domiciled in such State or Territory for at least one year previous to the examination."

For further information, apply at once to the United States Civil Service, Commission, Washington, D. C.

Medical Society of Virginia

Has issued *preliminary postals* announcing its Roanoke meeting, asking for titles of papers, giving subject and divisions of the discussion for Symposium on Pneumonia, etc. Responses to these cards should be in the hands of the Secretary, by August 25, in order to allow the Program Committee time to arrange and issue the circular announcement early in September.

This meeting promises to be one of the most interesting, socially and scientifically, in the history of the Society.

The Wise County Medical Society

Met at Coeburn, Va., July 28, Dr. Thomas E. Chapman, President, being in the chair, and Dr. T. M. Cherry, Secretary, reporting.

The subject for general discussion was—Common Diseases of the Stomach, Symptomatology and Treatment, Dr. J. B. Wolfe, Leader. Several other papers also were read and discussed. The bill for repeal of the special license tax on doctors was up for consideration, and it was decided to do all possible to aid its passage at the next legislative session.

Mosquitoes, Flies, etc., as Carriers of Disease.

Although this matter is sufficiently well appreciated by the profession at large, it is important that the public should be made acquainted with the facts. The Virginia State Board of Health has just issued an illustrated pamphlet on the subject for public distribution. It is to be hoped that doctors in their daily rounds will call this matter to the special attention of their patients and get them to read it so as to apply in their own homes the means of prevention of many communicable diseases.

The Fairfax County Medical Association

Held its annual meeting at the Hotel Rammel, Alexandria, Va., on August 5, 1909. Interesting papers were read, after which dinner was served. The following officers were elected for the ensuing year: Dr. F. M. Brooks, President; Drs. C. R. DuFour and C. L. Starkweather, Vice-Presidents; Dr. E. L. Detwiler, Treasurer; Dr. L. Powell, Secretary; and Dr. A. G. Coumbs, Corresponding Secretary.

The Baltimore Medical College,

Though so well-known throughout the country, might have failed of recognition by some of its many friends, owing to the "pied" condition of its advertisement in the last issue of this journal. We regret the error, but feel sure that the College, which begins its Preliminary Fall Course on September 1, and the Regular Winter Course on September 25, 1909, will not suffer by such a printer's error.

The Health Department of Richmond

Has just issued timely precautions to be observed in cases of typhoid fever. An intelligent reading of this circular, by the laity as well as the profession, will prove of interest, and may suggest some idea which might otherwise be overlooked. The circular may be obtained by application to the Health Department, Richmond, Va.

The Proctologist,

A quarterly journal published at St. Louis, Mo., will contain in its September number the twenty-five papers, with discussions, read before the 1909 meeting of the American Proctologic Society. There will be more than 150 pages of reading matter by the foremost proctologists.

The Southside Virginia Medical Association

Will hold its next meeting at Courtland, Va., on September 14, 1909. As is usual with this Society, a pleasant and profitable session is anticipated.

For Sale.—An up-to-date Medical Library which offers a rare opportunity for Practitioner or Student to purchase books he needs at most liberal prices. Terms cash.

A Practitioner wishes to dispose of a portion of library, consisting of latest editions of works on Surgery, Medicine, Obstetrics, Gynecology, Diseases of Children, Materia Medica, Therapeutics, Anatomy, Physiology, Pathology, Bacteriology, Histology, etc.; also various Specialties, such as Eye, Ear, Nose, Throat, Neurology, Dermatology, etc.

For further information address "Books," care Virginia Medical Semi-Monthly, Richmond, Va.

Location Wanted by Physician.—In a prosperous Virginia town, or would accept position as assistant to busy doctor. Have had five years' hospital experience, graduated 1902. Address E. M. C., care Virginia Medical Semi-Monthly.

Obituary Record.

Dr. Joseph W. Southall,

For many years Senator in the Virginia Legislature, and for two terms State Superintendent of Public Instruction, died at his home in Amelia county, on Monday, August 2, 1909. Being endowed with all the qualities calculated to inspire confidence and affection, and having in early life been highly educated in his profession, he was exceedingly popular in public as well as in private life, and exerted a wonderful power for good in his community. After retiring from public life of his own volition, he spent the past four years quietly at his home in Amelia county.

Dr. W. H. H. Cobb,

Of Goldsboro, N. C., died July 21, 1909. He was born at Mt. Auburn, Wayne county, N. C. After finishing his academic education he studied medicine at the University of Virginia and the University of Pennsylvania, graduating from the latter school in the Class of '61, before he was 20 years of age. Returning home he entered the Confederate Army as a private, was promoted to second lieutenant, subsequently standing his examination, was appointed assistant surgeon, and served with the 2nd North Carolina Regiment until the surrender at Appomattox. After the close of the war he located in Wayne county, N. C., removing to Goldsboro in '73. He served in numerous positions of trust—both civic and fraternal—being President, Vice-President, Chairman of the Board of Seniors of the State Medical Society, Member of State Board of Medical Examiners, one of the founders, first president, (serving two terms, one under temporary organization) and Honorary Fellow of the Tri-State Medical Association of the Carolinas and Virginia, and other positions of professional trust. For many years a consistent member of the Methodist Church, of sunny disposition, high ideals, a deep sympathy, a hard student, industrious and energetic, he was an ideal doctor. By his death the profession has lost one of its most highly esteemed members, and he has left behind him an example his brethren may well emulate.

Dr. Henry T. Hunter,

Formerly of Princess Anne county, Virginia, died in Norfolk, his adopted home, on August 5, 1909, after an illness of long duration. Dr. Hunter joined the Medical Society of Virginia in 1874, and remained an active member for some years. He held a prominent place in the profession, but was forced to retire from practice several years ago on account of failing health.

Dr. Charles S. Morton,

Of Lynchburg, Va., died July 28, 1909, as a result of injuries received by being struck by a freight train at Lawyers, Va. Dr. Morton, retiring from active practice, had moved from Pamplin City to Lynchburg about two years ago, where he had made for himself many friends, and was exceedingly popular. His widow and several children survive him.

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(FORMERLY VIRGINIA MEDICAL MONTHLY.)

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Original Communications.

SHOULD VIRGINIA IMPOSE A LICENSE TAX ON PHYSICIANS? SOME EVIDENCE FURNISHED BY A BRIEF HISTORICAL REVIEW.

By GEO. A. STOVER, M. D., South Boston, Va.
Chairman of Legislative Committee, Medical Society of Virginia, etc.

It is a strange thing that any State should impose a special license tax on physicians, who are in a broad sense the custodians of her public health. One would naturally suppose that she would recognize in the medical profession her strongest ally in the great fight being waged against preventable diseases, and in the work of educating the masses to a better understanding of the nature of these diseases, their dangers, and the proper means for their control and prevention. Especially would we expect this to be the case when we consider that the preservation of the health and lives of her citizens is the greatest economic work a State can perform. Most European countries and all but five States in the United States have considered this relation of the medical profession to their respective governments and do not impose a specific tax. But this is not true of Virginia. She has not kept pace with the onward march of progress and formed, as it were, a co-partnership with the medical profession in the interest of the great work that confronts her. On the other hand she pays them only a nominal fee for services rendered as expert witnesses, for commissions in lunacy, etc., and levies a specific tax besides. Is this dealing justly with the profession? Is it in keeping with the principles of equity? Are the common interests of the State and profession liable to be best conserved by such a law? To any impartial observer acquainted with the facts, the answer to the above questions must be *no*. The medical profession is now aiding the State in her health work, and for the State to thus profit by their services and not remove this tax is gross injustice.

It is not our purpose in this article to discuss every phase of the question, but to briefly review the history of the tax in this and other States as evidence of its injustice, and also to note the relation that the rapid progress in medical science—from the time the tax was first imposed to the present—bears to it.

HISTORY OF THE TAX IN VIRGINIA.

A review of the law reveals the fact that Virginia has levied a specific license tax on doctors for nearly 100 years. At first it was only nominal, $5.00. Later it was increased to $5.00 and 2 per cent. on all income over $500.00. Later, about the time of the Civil war, it was raised to $10.00 and finally to its present rate of from $10 to $25. While this does not appear to be so great a sum for each doctor individually to pay, yet the aggregate shows that it is a great drain on the profession. The total amount of license tax collected from doctors as reported by the auditor for 1906, was $36,465.00. It is reasonable to suppose that the increased number of physicians who have located in the State since then will bring the amount up to between $37,000 and $38,000.00 for this year. The State appropriates $40,000.00 annually to support her department of health. Thus, it appears, that the doctors of Virginia pay in license tax almost enough to support this department. Under present conditions the medical profession is practically carrying on the health work of Virginia without any expense to her other citizens. It is a notable fact that this burden on doctors has been gradually increasing while their efficiency as public servants has been constantly growing greater, making it appear that a "downward revision" is now in order.

Notwithstanding the injustice of it, and the

fact that few other States impose such a tax, the doctors of Virginia seem to have submitted quietly up to 1899, when a protest was entered at the meeting of the Medical Society of Virginia held in Richmond. However, it appears that no definite action was taken by the Society until at its meeting in Charlottesville, in 1900. The subject was then presented so forcibly that the following resolutions were almost unanimously adopted:

"Whereas, The physicians of the State of Virginia look after matters of public sanitation, make self-supporting citizens of diseased paupers, fight down deadly epidemics, and do more charity work than all professions combined; and,

Whereas, Nearly every other State of the United States that had them has repealed the special license taxes upon practicing physicians;

Resolved, That the medical profession of the State, through its State Medical Society, declares this special license tax upon practitioners of medicine and surgery an unjust law, and begs the Legislature of Virginia for a repeal of this measure during its next session."

A committee was appointed to present the matter to the General Assembly. Armed with these resolutions and backed by the organized profession of the State, this committee, under the able leadership of Dr. J. B. DeShazo, labored hard for eight years to secure justice for the doctors of Virginia, but it was only to meet with defeat, though almost victorious at the last meeting of the Legislature. The willingness of our law-makers to sacrifice justice to economy was the main cause of defeat; but times have changed, and Virginia can no longer plead financial inability to remove this tax. Reference to the Auditor's report shows that from October 1st, 1907 to October 1st, 1908, revenue receipts increased $259,402.28 over the previous year, and on October 1st, 1908, she had on hand $535,313.95. We do not believe that history necessarily repeats itself. With the doctors and most of our legislators educated as to the merits of our claim, the more apparent relations of the profession to the State since the creation of the State Department of Health, and the ability of the State financially to sacrifice this amount of revenue, we believe that Virginia will no longer maintain her antiquated attitude towards this question.

HOW OTHER STATES VIEW THIS TAX.

The consideration of the example and experience of others is often a better means of arriving at a correct conclusion than mere abstract discussion. In this connection, it will be interesting to note, as presumptive evidence of the injustice of this tax, the attitude of other States towards it. Sometime ago a letter of inquiry was addressed to the Secretary of every State Medical Society in the United States, asking for information as to the practice of their respective States in regard to this method of taxation. From replies received, the following facts were revealed: Only four States besides Virigina impose a specific tax on doctors, namely, Georgia, $10.00 per annum; North Carolina, $5.15 per annu; Delaware, $10.00 per annum, and Louisiana, $5.00 for every $750.00 income. The following States at one time had such a law, namely; Mississippi, Montana, Illinois, Florida, and Texas. In the first four mentioned, it was repealed by the legislative enactment, and in the last was proven unconstitutional. Few, if any, of the other States ever resorted to this method of taxation.

These facts are very significant. They tend to show that most States hold their physicians in higher esteem than Virginia, and recognize in them valuable public servants. Many of them are far ahead of Virginia in their health laws. In the light of these facts, and with a profession second to that of no other State, either in ability or willingness to render service for the public good, should not Virginia acknowledge her error, repeal the law, and ally with herself the medical profession in the great work for public health and the advancement of the interest of all of her people? With adequate health laws, the State and profession thus cooperating, she would take her stand in the forefront in this line of endeavor where she has always stood historically and politically.

RELATIONS OF PROGRESS AND MEDICAL SCIENCE TO TAX.

At the time the law under discussion was enacted, and for many years afterwards, the medical profession did not measure up to its present standard of efficiency. This statement is not made with any intention to discredit the physicians of those times. They were as noble a class of men as ever lived, and were the most

highly educated, cultured and useful citizens of that day. They were the pioneers in medicine and surgery. Notwithstanding their ability, the state of medical knowledge at that time rendered their work largely experimental. In the diagnosis of disease they had to rely mostly on their powers of observation and common sense, and in the administration of remedies empiricism was the rule. This was necessarily so, owing to the lack of knowledge concerning the etiology and pathology of disease. In spite of these handicaps, many of them became wonderful in their diagnostic ability and skill in treatment. However, their limited knowledge of the real cause of diseases and means of prevention, especially of those that are communicable, necessarily confined their usefulness to a narrow sphere. They stood powerless in the face of epidemics of contagious and infectious diseases, that spreading from place to place, slayed their thousands, and during times of war killed more soldiers than were lost in battle. Contrast, if you please, this period of history with the present. Following the perfection of the microscope and the discovery of the germ theory, the history of medicine within the memory of most of us has been one succession of triumphs. Through the sacrifice of time, money and even life itself, the doctors of the world have discovered the real cause of most of the diseases that attack humanity, and in a large degree have robbed them of their terror.

Preventive medicine is the order of the day, and the doctors are back of the movement. As their knowledge has increased, they have given it freely to the world. They have used their influence to have laws enacted looking to the elevation of their own profession, the betterment of sanitary conditions, and the prevention of disease in every way possible. And all this against their own monetary interests. The benefits that the masses of the people and the State derive from this increased efficiency and unselfish service are of incalculable value. The lives of many citizens are spared to usefulness and thousands of dollars saved annually to the State. Does not all of this show conclusively that the evolution of medical science has placed doctors in a more vital relation to the State than could have been possible in the past? And should not Virginia recognize this fact and abandon this means of increasing her revenues?

Since she has failed in the past to heed our protests, we find ourselves facing another contest at the next meeting of our General Assembly, January, 1910. We therefore call upon every doctor in the State to stand up for what is justly due us, remembering that it is a principle for which we contend, and not simply the amount of money involved. To our legislators and all fair-minded citizens, we submit these considerations, believing that if they weigh well the facts as they are, they will lend their influence and support to our measure.

We do not claim that this is all the legislation needed to properly establish the relation between the State and her doctors, but the latter will always be found ready and willing to co-operate in any movement for the public welfare.

TREATMENT OF THE ACUTE DIARRHEA OF INFANCY.*

By J. BURTON NOWLIN, M. D., Richmond, Va.

Under the above title, I have included all of those diseases of early life of which excessive bowel movement is the most important symptom. For obvious reasons, the symptomatic diarrhea of the acute infectious diseases is not included. Until bacteriology and chemistry of food metabolism have given us the exact etiology of the different types of intestinal disorders, we must necessarily treat these diseases to a great extent symptomatically at the present time. However, it can be safely asserted that the treatment of these disorders of childhood that have played such an important role in infant mortality is to-day on a more scientific basis than ever before; and it is to be expected that our results in the future will be better than in the past.

General Prophylaxis. In the treatment of the disease under consideration much can be accomplished by prevention—not, however, by preventive measures that are taken only at the onset of hot weather. From the very outset, we must realize that anything that lowers the vitality of the baby is a causative factor in the production of these diseases. Therefore, to make our prophylaxis effective, we should be-

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gin by looking after the condition of the mother. Why is it that we pay so much attention to breeding healthy, robust colts, calves and pigs and allow our children to be born in almost any condition? Is it because we do not bestow blue ribbons and other premiums on the prize babies at annual fairs and shows? Seriously speaking, we, as physicians, neglect our duty by not giving to the expectant mother the attention she deserves and the treatment she so often needs. If the woman has the proper care as to food, rest from hard labor, freedom from much excitement and proper medical treatment, then her baby comes into the world much better prepared to begin and to continue the struggle for existence. If we gave more attention to the woman's breasts before labor, we would have fewer bottle-fed babies and fewer cases of diarrhea to contend with. The constitutional diseases, if present, are to be given appropriate treatment.

After birth, as soon as the mother has rested, she or her nurse should be given careful instructions as to the number of feedings, the interval between feedings, the care that should be given the mother's nipples and the baby's mouth; directions as to the care and preparation of food, care of the nipples and bottles if the baby has to be artificially fed. The amount of clothing, time to be spent in sleep and time to be spent our of doors should be prescribed as well as any other means that will enhance the baby's comfort and well-being.

Of course, the most important item is the baby's food, and here, I think, we have the reason of our failure to cope successfully with the diarrheas of summer. It is my opinion, and I think the facts will bear me out, that children do not die so much from the diarrhea as from starvation, slow but sure, due to improper methods of feeding. Is not starvation the reason that the children of the poor who are fed on condensed milk, cambric tea and anything that will stop the child's crying, succumb to the disease in the hot weather, while their better-off brothers and sisters who are properly or more properly, fed, survive? Here, the question "what is proper feeding" has to be answered. In the first place, it is always mother's milk. Let me say here that the mother who from any reason but a physical one refuses to nurse her child and the physician who sanctions such a course assume a most serious responsibility, one that they should consider well before undertaking. In the second place, proper feeding is any method by which the child's hunger is appeased and by which he is enabled to gain properly in weight and length—it makes no difference whether he be fed by the most scientific percentage method with milk from a Walker-Gordon laboratory, on ordinary milk, on condensed milk or on one of the many proprietary foods so long as he obtains the necessary amount of fat, sugar and proteid.

There is another method of starvation that is often overlooked. I mean sunshine and fresh air starvation. We have at last realized to a very great extent the baneful effects of impure air and lack of sunshine in predisposing to tuberculosis, but we have not yet awakened to the necessity of sunshine and fresh air in rearing our children. As Northrop has well said, the child ought to have fresh air for twenty-three hours, the other hour being taken up with the bath and the change of napkins. While the child is to be allowed out of doors as much as possible, association with children who have diarrhea should be prohibited, as infection may occur from the infantile habit of putting fingers and toys in each other's mouths. The baby should not be carried on long trips in warm weather as fatigue is a very potent factor in the production of digestive disturbances. Before sending a mother with her child to the country, the location of the house, amount of shade, size of rooms, source of milk supply and accessibility to a capable physician should all be considered. In quite a number of cases the child would be better off at home where it can be more comfortable and where it has the advantage of carefully inspected, dairy milk.

All constitutional diseases in the child should be given special attention before the onset of hot weather, as these children are the ones who suffer most from gastro-intestinal troubles. The mother should be impressed with the necessity of having a physician treat any errors of digestion that may occur, however slight they may seem.

Care of the Sick Baby. In all cases the child should be put to bed and kept as cool as possible. If the child is a very young infant, it may be held on a hard pillow but never in the mother's or nurse's arms. The bath is to

be given as in health, special attention being paid to the buttocks. After each movement the buttocks are to be carefully bathed, dried and powdered. If there is any excoriation, oxide of zinc ointment should be used. The napkin should be placed at once in a strong solution of boric acid and taken from the room. In no case is a napkin to be used a second time. While changing the napkin, the baby's hands should be kept out of the discharges to prevent reinfection. It is much better for the same person who attends to the preparation of the food not to have to change the napkins. If this is impracticable, the nurse or the mother should wash her hands in some antiseptic solution which, in cases of infectious diarrhea, should be a solution of bichloride of mercury. If the baby is nursed, the same precautions are to be taken as the mother's fingers are apt to come in contact with her nipple and thus carry infection. In examining a child the physician should not use his own thermometer, but the nurse or mother should have one ready for him. His hands should be carefully washed before and after the examination. Water should be given in as large amounts as the child will take without vomiting. The baby can do without food very well, but does not stand the loss of water at all well. The other organs, especially the bladder and kidneys, should be watched. I have seen several cases where a distended bladder very seriously aggravated the condition. The baby should have rest for body and mind and not be interfered with except when it is absolutely necessary.

Treatment. For purposes of treatment, the diarrheas of infancy may be divided into (a) those due to nervous influence; (b) those due to digestive derangements; (c) those caused by bacterial fermentation and (d) those caused by bacterial infection. Of course, no hard and fast lines can be drawn, as the different types will often merge into one another. To distinguish clearly the various types and to make the treatment plain, I have thought it well to give a few of the leading symptoms, especially the character of stool in each type.

(a) *Diarrhea Due to Nervous Influence. Acute Nervous Diarrhea.* This form is due to heat, cold, fright or to some reflex nervous disturbance, such as difficult dentition. Appearing suddenly, the symptoms are slight abdominal pain, restlessness and pallor. There is seldom vomiting or marked rise of temperature. The bowels move every half-hour or so. The stools at first are normal in consistency, color and odor. They soon become more watery and lighter in color. There is usually a large amount of gas. *Treatment.* The child should be put to bed and kept there until all diarrhea has been checked. A dose of castor oil or calomel in one-tenth grain doses is to be given as soon as the child is seen. Fairchild's essence of pepsin in drachm doses after each feeding, with paregoric or Dover's powder to control pain, is all the medicine necessary. Hot applications to the abdomen are very grateful to the patient and, perhaps, are of assistance. The old spice poultice may be used instead. The food should be milk with ten per cent. lime-water. This form of diarrhea should be checked as rapidly as possible as the intestines are rendered more susceptible to the action of the various bacteria, and more serious forms of diarrhea may result.

(b) *Diarrheas Due to Digestive Disturbances.* There are two forms of diarrhea dependent on faulty digestion. One is due to either too much fat in the food or to a deficiency of the fat-converting secretion of the intestine. This form has been called the *acute duodenal.* The other form is due either to an excess of the food or a deficiency of the intestinal secretion in either quality or quantity lower down than the duodenum. This may be called the *intestinal form.*

1. *Acute Duodenal Diarrhea.* This is characterized by excessive nausea, bile in the urine, jaundice, which is most marked in the conjunctivæ, and frequent, clay-colored stools. The only treatment is a reduction or a complete withdrawal of the fat of the food for several days. In the breast-fed, this may be done by giving water before each feeding. If this is not sufficient, the child should be taken from the breast and fed on skimmed milk. The bottle-fed should be given skimmed milk and, in extreme cases, separator milk is preferable. Do not give calomel in this form until the trouble is over, as it will only aggravate the symptoms. This type is rare in children under two years of age, but does occur occasionally.

2. *Acute Intestinal Diarrhea.* This is due either to too much food or to a deficient amount

of deficient quality of intestinal secretion. The onset may be gradual or sudden. Abdominal pain and vomiting may or may not be present. If present, they usually precede the diarrhea. The stools are loose, rather large in amount, varying from six to twelve in twenty-four hours, and are usually free from much odor. The color is a mixture of yellow, brown and white, the latter being caused by the presence of curds of various sizes. A light green is sometimes seen, but the darker shades of green are not seen unless there be some fermentation. Blood is seldom present and when it does occur it is late in the disease, differing in this respect from the infectious form where it occurs very early. Fever is usually slight or absent. There is usually a gradual loss of weight. The initial *treatment* of acute intestinal indigestion is to clean out the stomach and intestines thoroughly. Castor oil, if the stomach will retain it, is the best purgative. If the stomach is too sensitive, calomel in one-tenth grain doses, is to be used. All food should be withheld for twenty-four hours. Sterile water should be given for the thirst. Bismuth in ten to thirty grain doses, does good here. If it is not changed in its passage through the intestines, it is well to combine it with sulphur as it does very little good unless it is converted into the sulphide. If there are no signs of fermentation the return to the usual food should be as rapid as possible. It has been my custom to give in this form, bichloride of mercury in small doses, as a preventive measure against the bacteria of fermentation. After the first twenty-four hours, milk can be given if it is properly modified. It should contain ten to fifteen per cent. lime water, and have all the elements considerably reduced, and should be given fresh. In the place of milk, weak animal broths may be given for a short while.

(c) *Diarrhea Due to Fermentation. Acute Fermental Diarrhea.* This is the form that we meet so often in bottle-fed babies. It is not so frequent in breast-fed children, the proportion being about six to one. It usually begins very abruptly with high fever, vomiting, abdominal pain and large greenish or greenish-yellow stools accompanied by large quantities of gas. The odor is very offensive, being either sour or putrid, the bowels move very often, sometimes being almost continuous in their action. In 1906, Tissier discovered that the active agent in the production of this form of diarrhea is the bacillus perfringens and that its most active bacterial opponent is the lactic acid bacillus. Upon this fact is based the modern treatment of this type of intestinal disease. However, it is not so modern, as without knowing the reason for its use, buttermilk, almost a pure culture of lactic acid bacilli, was used in this form in 1876, and has been used at various times since. But it was not until Tissier produced his thesis in the year mentioned that much attention was paid to the treatment of fermental diarrhea by the use of ferments.

Without knowing the reason for the good results obtained, the writer in his work among children in the country had used buttermilk and "clabber" with sugar in this form since 1900 and always with good results where the children would take it, which was not always the case.

Before beginning the use of the ferments it is necessary to clean out the stomach and bowels thoroughly. Here, again, castor oil or calomel is to be given. Personally, I think that the oil is the better and should be given in large quantities and repeated if necessary. All food should be withheld for twenty-four hours, water being given in the meantime. The lactic acid bacilli may be introduced into the intestines in several ways. Tissier used a pure culture in bouillon, of which one to two ounces may be given every four to six hours. The most convenient method is by the use of the lacto-bacilline tablets marketed by the Franco-American Ferment Co. These may be given dissolved in sweetened water or be put into the baby's bottle at the time it is given him. This does away with the trouble one sometimes has of getting a child to take the soured milk preparations. Where a child will take buttermilk, it may be given as such or as the artificial preparation, bacillac. Where the nutrient qualities of the milk as well as the therapeutic effects are desired, it is well to use the buttermilk. The lactone tablets, marketed by Parke, Davis & Co., furnish another convenient means for administration of the bacilli. According to Combe, these act only chemically.

If possible to obtain, a good buttermilk made from clean milk is about as satisfactory a

method as any if the baby does not object to the sour taste. Sugar may be added to make it more palatable. The soured milk preparations should not be continued any longer than the specific action of the ferment is desired, as some children do not stand their use for any length of time. If the ferment is used, none of the antiseptic preparations are to be used, for their action will prevent the growth of the bacilli.

Some pediatrists, notably Kerley, La Fetra and several others of New York, do not approve of the use of the lactic acid bacilli, claiming that children do not do at all well on this method. It has been unusually satisfactory in my hands. Dunn, of Boston, in his paper read before the last meeting of the American Medical Association at Atlantic City, reported 172 cases, the largest portion of which was very greatly benefited by the use of the bacilli.

The only other method of treatment that I have found of service is the use of mercury, of which the bichloride is the best preparation. I prescribe it in a solution of one grain to four ounces of water, giving ten to fifteen drops every four hours until the stools become yellow in color and remain so. This is usually the case in from twenty-four to forty-eight hours. Then the dose is decreased, the aim being to give just enough mercury to keep them in this state. Food is withheld for the first twenty-four hours, at the beginning of which the usual purge of castor oil is given. At the expiration of this time, the usual food is resumed but the mercury is kept up for a week or more. Irrigation is done in some cases, but I think in this form of diarrhea, irrigation is generally overdone.

Drugs, other than mercury, are to my mind a failure in the acute stages. I cannot see the advantage of putting bismuth or any of the so-called antiseptics into a gut filled with a large quantity of actively fermenting material. After the diarrhea has ceased, then bismuth in from ten to fifteen grain doses every four hours, does good by its soothing effect on the intestinal lining. In this form, of course, no attempt should be made to check the active peristaltic movement as this is nature's effort toward a cure. It is frequently attempted, however, with most disastrous results in some cases. For this reason opium and the tannin preparations had better be omitted from our list of remedies. After the stools have become normal in color and odor and only the too frequent movement remains, then we may use opium in the form of Dover's powder in one-tenth grain doses every two hours with benefit.

The food in some of these cases is a difficult problem. If the lactic acid bacilli are used, the usual food is continued. As a rule, the carbohydrate preparation can be given with least damage. There are cases in which we have to neglect the bowel and continue to feed the child regardless of the diarrhea. In all cases the return to the usual quantity of food is to be as rapid as possible. During convalescence, pepsin and nux vomica are useful.

Cases will sometimes be met with that do not respond to either the use of the lactic acid bacilli or to mercury. These cases are to be regarded as mixed infections and had best be treated with the anti-dysenteric serum. Especially should this be done if there be much mucus present in the stools.

(d) *Diarrheas Due to Bacterial Infection.* Under this head there are two types, infectious diarrhea and acute gastroenteric infection.

1. *Infectious Diarrhea or True Dysentery.* This may be secondary to one of the preceding forms or it may be primary. The symptoms are high fever, rapid pulse, prostration and frequent small stools always mucous in character and generally mixed with blood which appears early in the disease. Tenesmus and tormina are usually present. As this form is due to the bacillus dysenteriæ, the rational treatment is the use of anti-dysenteric serum. Unfortunately, there are several types of the bacillus and, as yet, there is not a serum directed against every form of infection. To this fact is due the failure in some cases of this method of treatment. However, it should be used in every case. As in diphtheria, the earlier the serum is used the better the results. In ordinary cases, 10 to 20 cc. every six hours are sufficient; but in some cases, it is better to begin with a larger dose, 30 to 45 cc., repeated in eight hours. By this method, the mortality has been reduced more than one-half and the individual cases shortened from four to six weeks to a week or less. I am convinced were the serum used earlier and in larger doses the results would be still better.

If for any reason the serum cannot be used, the case will have to be treated symptomati-

cally. An initial purge of castor oil or calomel, with abstinence from food for forty-eight hours, is to be given. To relieve the pain and check the excessive peristalsis, opium is usually necessary early. This may be given as paregoric or in the form of Dover's powder, always in prescription by itself. To relieve the tenesmus, cocaine, 1-6 to 1-2 grain in suppository, or the opium and starch enema may be given. Hot applications to the abdomen also do good. Here, as in the other forms dependent upon bacterial action, bichloride of mercury is the best drug internally, though bismuth in large doses may be tried. In the acute stages, the bowel should be irrigated twice a day, using a normal salt solution. After the acute symptoms have subsided, irrigation should be done only once a day, and then a solution of bichloride of mercury, 1 to 10,000; nitrate of silver, 5 per cent.; ichthyol, 2 1-2 per cent., or tannin 5 per cent. Argyrol in ten per cent. solution may be used instead of the nitrate of silver. Often, the discharge of mucus is kept up by the irrigation.

After the primary starvation, food may be allowed. It should always be given as hot as possible, as it is better borne thus than when given cold. According to most authorities, milk should be omitted entirely from the diet list. As no very satisfactory reason has been given, it may be allowed in some cases. Soups, broths, beef tea, Mellin's or Liebig's food, acorn cocoa, racahout, strained oatmeal, farina, arrow root and sage may be given. Stimulants are at times necessary, when brandy in small doses, every half hour, should be given. As a tonic during convalescence, nux vomica with hydrochloric acid does good. A trip to the country for several weeks is of great benefit.

In cases of infectious diarrhea, the same precautions as to food, table utensils, linen and the discharges as in typhoid should be taken. The room should be well screened against flies and no other children admitted.

2. *Acute Gastroenteric Infection.—Cholera Infantum.* This may appear suddenly or be secondary to one of the preceding varieties. The leading symptoms are high fever, rapid pulse, excessive vomiting, frequent choleriform stools and collapse. There are two indications for treatment—to combat the toxemia and to supply the loss of fluid. The stomach should be washed out thoroughly, using the normal salt or a soda solution, one drachm to the quart. After rinsing the stomach, it is well to leave from four to six ounces of water in the stomach. The solution should always be warm. Personally, I prefer introducing the tube through the mouth instead of the nose. The bowel should be irrigated with a hot solution of salt unless there be hyperpyrexia when the solution may be used cold. Ice-water has been advised by some authorities, but I think that the risk of producing fatal collapse is too great. If used at all, it should be done by the physician himself and the effect carefully watched.

To combat the loss of fluid, hypodermoclysis should be resorted to, care being taken to have the apparatus sterile and not to inject more than one drachm for each pound of body weight in fifteen minutes. This may be repeated in four hours.

After the stomach and bowels have been washed out, morphine 1-100 to 1-20 grain with atropine 1-250 may be given every two hours to check the vomiting and excessive peristalsis. This should be given by the physician and the effects carefully watched. The hyperpyrexia should be treated with hydrotherapy. Stimulants are early called for, of which brandy, in small doses frequently repeated, is the best. Port wine and claret may also be given. The only other drug that I have ever seen do good is mercury, either as calomel placed on the tongue or as bichloride in 1-100 grain doses every two hours. If collapse be present, the child should be placed in a pack the temperature of which is 100 degrees and kept at this by pouring on hot water every twenty minutes. At the same time, hypodermoclysis should be given, to which caffeine, 1-6 to 1-2 grain, is added. Ether and camphor may be given hypodermically. Alcohol should not be given in this stage. If the hot pack is not used, a hot mustard bath should be given, the child being kept in the bath until the attendant's hand is reddened. In using either the hot pack or the bath, cold cloths should be kept on the child's head. The ears should be stopped with cotton during the bath, and the eyes, if open, as they generally are in this condition, should be covered with moist gauze. Food, as a rule, does not enter in the treatment of the acute attack, all efforts for the first twenty-four hours being directed to keeping the baby alive. After

the acute symptoms have subsided, the return to food should be very gradual. For the first few days, gavage with a partially digested food every six hours is better than feeding in the usual way. During convalescence, nephritis and typhoid conditions are to be treated as they would be under other circumstances.

In conclusion, see that the mother is prepared to nurse her baby and insist on her doing so.

See that the baby is properly nourished and is in a good condition to stand the hot weather.

Treat all constitutional diseases before the heated term.

Regard every attack of indigestion as a beginning diarrhea, and

Don't starve the baby while he is sick.

Don't drug him unnecessarily and without a definite aim in view, and

Don't let him die for want of water.

UNCINARIASIS.*

By J. RUSSELL PERKINS, M. D., Spencer, Va.

At the last meeting of this Society I presented a specimen of hook worm, and was asked to read a paper on the subject at the next meeting. I reluctantly consented, for having had so little experience with the trouble, I really felt incompetent to do justice to such an important subject.

I have seen just enough of the disease to find that in our practice, we are overlooking it, almost every day, calling it "liver disease," "blood disease" and various other misnomas. There is very little excuse for this, for if we look carefully, we will be sure to find it. The trouble is easy to diagnose, easy to treat, and I know of few troubles that respond more readily to treatment and give better results. Some cases, in my opinion, if left untreated, will certainly prove fatal; in others the vitality will be lowered to such a degree that the patient is unable to resist the slightest illness.

The two most usual sources of infection are the skin and the mouth. The hookworm larvæ may pass through the skin, reach the circulatory system, pass with the blood through the heart to the lungs; from the lungs to the air passages, up the larynx, down the esophagus to the stomach and then to the small intestine. If the infection occurs through the mouth it is caused by contaminated food or water, or from earth containing hookworm larvæ that cling to the hands. In the few cases that I have known, infection occurred through the skin, as the illness could be traced to "ground itch."

As to the frequency of this disease, I believe it far more frequent than is generally suspected. Within the last four months I have successfully treated three cases, and have several more under observation.

Concerning locality, it seems to be general—being found at the seashore, and as often in the mountains; usually among the lower walks of life.

The symptoms depend on the degree of infection. In some cases we notice nothing more than slight pallor, and on microscopical examination the presence of the eggs in the feces. On the other hand, we may find every symptom of profound anemia. The most prominent symptoms are pallor, palpitation of the heart, shortness of breath, pain and tenderness in the epigastrium, vertigo, passage of black stools (due to the presence of blood), hæmic murmurs, throbbing carotids, increased flow of urine, and all kinds of digestive disturbances. If the infection occurs before puberty, it is apt to retard development—both physical and mental. The skin has a waxy white appearance, and there is a peculiar blank facial expression hard to describe, but common to all cases when infection is severe, and from which one can almost diagnose the trouble. The appetite is generally good and sometimes abnormal; the patient craves sour articles, such as pickles and lemons, and often chews sticks and particles of clothing.

The diagnosis is easy for one who has seen a typical case, and can often be made correctly from the symptoms alone. A positive diagnosis can be made by examining the feces microscopically to find the eggs, or by giving an anthelmintic experimentally, and examining the stools for adult worms.

Treatment.—The most popular drugs used are thymol, male fern, and betanapthol. Thymol has given excellent results in my cases, and I have had no occasion to use the other remedies mentioned. It is very necessary to have the intestines empty and clear of mucus before beginning treatment; if not, results will

*Read before the Patrick Henry Medical Society at Martinsville, Va., July 15th, 1909.

be disappointing. Some authors advise starving the patient the day before, giving calomel and podophyllin, and next morning a large dose of salts, followed in a short while by the thymol. In my experience this has upset the stomach and produced such nausea that the thymol could not be retained. When treating a case, I allow three glasses of milk the day before; and in the afternoon I give a large dose of salts which usually acts well on account of the small amount of food in the intestines; early next morning I begin with the thymol, giving from ten to twenty grain doses every hour till four or five doses are taken. Usually, within a short time after the last dose, the bowels begin to act and the worms appear in the stools.

In case no action is produced in a short time, it is best to give another purgative. By this time the patient is weak and nauseated, and salts may not be retained. In such cases, a bottle of cold citraate of magnesia (effervescent) acts just as well, is more palatable, and better borne by the stomach. If the thymol is too irritating to the stomach, give one-eighth to one-fourth grain of cocaine before giving first dose. No food should be allowed the day of treatment till four or five hours after worms begin to pass.

A good tonic and blood builder is very important in connection with the treatment. I have used syrup of iodide of iron, Blaud's pills and other preparations of iron; but have found nothing to compare with Lilly's Liquid Blaud, with arsenic and strychnine. This seems to suit these cases, and restores the hæmoglobin and red blood cells more rapidly than any other preparation I have tried. Beginning with fifteen drops, I gradually increase to a teaspoonful dose.

The following is a brief report of my first and most severe case—a little girl nine years of age. Four years ago, she had "ground itch." Before that time, she was in good health. In a short time, she began losing weight and gradually grew worse till she weighed only thirty-nine pounds—having every symptom of hookworm in its worst form. Her average pulse rate was 140; hæmic murmurs very pronounced; shortness of breath; fainting spells, indigestion, and passage of blood in stools. For a year she had spent two-thirds of her time in bed and for the last four months of her illness was practically an invalid, being unable to sit up. It might be well to mention that for four years, she had been treated for cirrhosis of the liver. I was called in the case and after a hard fight persuaded the family to allow me to have

a microscopical examination of the feces made. This revealed the presence of eggs in abundance. She was so weak that I gave only five grains of thymol at first dose, which brought a few worms. I gradually increased the dossage each week afterwards till twenty grains could be given. After a few treatments she began to improve and since has been improving rapidly. She now weighs fifty-five pounds and is enjoying perfect health.

After giving eight treatments, the family counted more than nine hundred worms, and I am quite sure that several hundred passed unnoticed. The worms I have with me were obtained from this case; I also have her picture which was taken a short while after treatment was begun, which will give some idea of the appearance of these patients.

MUSINGS OF A MEDICAL MAN.*

By R. H. BARTHRIGHT, M. D., Vinton, Va.

For years we have met regularly together to read and discuss medical and surgical theses. Recently it occurred to me that perhaps it would not be considered inopportune to omit the usual scientific essay, and spend a part of the evening, by way of variety, in the consideration of

*Read before the Roanoke Academy of Medicine, Roanoke, Va., on June 21st, 1909.

a somewhat different subject. Hence, I come before you to-night and ask your indulgence while I express in an imperfect way a few thoughts under the heading of "Musings of a Medical Man."

The material which we use in our work and from which we obtain a livelihood is the public—the people—of which there exist various and sundry kinds.

The young physician begins his professional career, feeling that by his pleasing address, excellent ability, and close attention to duty, he will easily satisfy all kinds of people. But what a mistake he makes!

Before he has been long in the field, he is reminded of the old fable of Esop, which he read in the Latin when a school-boy, concerning the man, his son and their ass, and is sensibly and forcibly impressed with the truthfulness of the moral, viz.: "He who tries to please everybody, pleases nobody, and loses his ass in the bargain." So much of the dark side of humanity shows itself to the doctor, if he does not watch closely, he will find himself drifting away from that which is best and truest in life, and before he is aware of his driftings he will become a veritable "Simon of Athens."

I am glad to know, however, that we have few misanthropes in the profession. On the whole, we are a body of genial, optimistic good fellows.

There is no trade, profession, or calling that brings more weariness to mind and body than ours. It is well, therefore, that we are capable of dropping cares and annoyances and of getting out in "the sunny side of the street;" for, "Why should a man whose blood is warm within, sit like his grandsire cut in alabaster?" Many people think that the doctor's lot is cast on "flowery beds of ease," but they are mistaken. The man who toils in the field with plow and hoe, or with scythe in hand, sweeps through fields of ripened grain from early morn until dewy eve, and, at the twilight hour, "homeward plods his weary way," can say, "My work is done. I'll go to bed," where he sleeps, without a care, through the livelong night, and the next morning, refreshed and invigorated, is ready for the new day's toil; but the doctor, with Darby's wife, "N'er can say, My work is done till judgment day." He has to keep going in storm and sunshine, facing wintry winds, traveling over ice and snow, thinking, plodding, studying, worrying, until his face is wrinkled o'er with care, and his head is turning gray, and his steps are tottering, and he is old before the time.

When a man who works in the field or shop says to me: "Dock, you don't know nothing about work," he makes me tired. If, by some hook or crook, he could be suddenly transformed into a physician, and met with the tantalizing and harassing experiences that come to us, in *one week* he would "cuss and quit" in disgust.

Sometimes our work goes on in a smooth and easy way, out patients yielding promptly to our therapy, and everything working to our satisfaction, until we begin to feel that we are about equal in skill to any of our professional brethren, when something happens that knocks our self-importance into smithereens. To illustrate: In a cottage by the railroad, a venerable father in Vinton, with many descendants, and a double hernia, became suddenly ill, and sent for his usual physician to reduce hernia. The doctor made an effort to do so and failed. He then gave a hypodermic of morphine and atropine, put on an ice bag, waited an hour, and manipulated again. Still no results. He lifted high the foot of the bed, caught hold of the mass, and squeezed and pushed, and pushed and squeezed. The hernia refused to disappear. The wife, who had shared the old man's joys and sorrows for more than sixty years, wrung her hands in anguish, and cried audibly when she was told he must have his belly cut open or die. One of the sons was despatched for, a surgeon, who promptly appeared. By this time excitement was running high in the community. The daughters, the sons' wives, and other sympathizing females gathered in the parlor, and spoke in whispers. The little children clung together and gazed in consternation on the surgeon's formidable looking emergency case; the kettles containing water for the sterilization of instruments sat on the kitchen stove and sang a weird monotone. In the room where the dying man lay were gathered the sons and neighbors, who stood with faces anxious and grave. The attending physician said to the surgeon, "Before operating, examine him." Accordingly, he removed the ice bag and placed his hand on the swelling, when, lo! the thing suddenly growled ominously, as if an-

gered and frightened by the surgeon's touch, and then sneaked back like a coward, and rejoined its companions in the abdominal cavity. The tension on the faces of the on-lookers relaxed. The old man's physiognomy was a study. First, there was an expression of surprise, then turning his face toward the physician, his look expressed disgust. After this his eyes moved in the direction of the surgeon, he reached forth his hand, patted him lovingly on the back, while his countenance beamed with joy, and said: "You are the boy for me."

Everybody in that room was smiling and happy—except the attending physician. He sat in his chair, wriggled and squirmed, and grinned a sheepish grin.

Let me remark right here that I hope none of you think this a bit of personal experience.

Someone has said that the telephone is a nuisance; nobody realizes this fact better than the doctor. Let him come in after a day of unusual physical and mental exercise, hoping to spend a pleasant evening in the home with the wife and children—

"When he's very tired or lazy,
And is trying to take it "easy"
That confounded bell goes crazy,
And begins to ring, ring, ring"

During a cold January I treated a little brown-eyed boy of two years for pneumonia. The window of his room was opened at the top, so that he received a good supply of fresh air throughout his illness. John had a devoted aunt who lived some miles away and who paid him a visit. When she saw the windows lowered she lifted her hands in holy horror and ordered them closed, but John's father and mother were sensible people and observed the doctor's directions. That night after returning home the aunt called me up and said, "Doctor, will you please have the windows closed in John's room? I am afraid the night air will injure him." I told her if John breathed at all at night he must necessarily breathe night air. If the windows of his room were closed he would inhale foul night air, whereas if they were open he would breathe pure night air, which would be better for him. She seemed unsatisfied, and later, when I had gone to bed and was resting my head upon the rosy bosom of the gentle pillow, there was a loud ring of the telephone. A man at the other end said: "Doctor, this is John's aunt's husband. John's aunt says will you please send a note by a boy to John's mother and tell her to close the windows; she is afraid the night air will hurt John." I replied emphatically and with some degree of irascibility, "No," hung up the receiver, and went back to bed, but in the perturbed and aggravated condition of my mind, I found that Morpheus had frowned and fled; and when at length I climbed the barrier that lay between me and the gentle Goddess, my sleep was disturbed the whole night long with dreams of cranks and anxious aunts.

I am happy to say that John got well, but his aunt thinks he had a narrow escape and doubtless still believes that carbonic dioxide is an important therapeutic agent in pneumonia.

In this age of commercialism when almost everybody is in the mad rush for the almighty dollar, hardened by the associations of the men of the world, we are apt to forget our early training, and practice our profession solely for filthy lucre's sake. It is well to pause now and then, lest we be overwhelmed in the maelstrom, and forget the motives which induced us to enter this great and noble calling. Inspired by the unselfish life of the old family doctor, in whom all the community placed implicit confidence, we started upon our careers with lofty ideas, determined to spend our lives in bettering the condition of our fellow pilgrims on life's highway. Let us not forget, gentlemen, that our work is not only to heal the sick, but to instruct the people how to live so as to avoid contracting diseases. Tuberculosis and typhoid fever—preventable diseases—are stalking abroad in the land, costing annually millions of lives, and millions of money. With adequate resources we can so impress the masses as to throttle these twin monsters. Our health laws should be so framed that local boards of health would have some authority, so that when the men composing such boards say a thing needs to be done, it will be done, and no questions asked.

To the profession of medicine the world is indebted for advancement in civilization and progress. By prolonging human life and preventing disease it has been the direct agent of giving to the people much of health, happiness and prosperity.

Scourges which once devastated the nations

have been practically obliterated from the face of the earth.

In our own Southland the dreadful yellow fever no longer gives the populace serious concern.

To the Virginia doctor, whoses genius and untiring energy and patient research resulted in conquering this malady, we point with reverence and with pride; and though while in the noontide of life he was called away to lie down and die, his labors of love for humanity will live in the hearts of the coming generations of men. "These cannot expire." Green be the grave and glorious the resurrection of Walter Reed.

Medicine being a progressive science, there is much in its study to charm and enrapture the student, and the doctor finds rich fields always ready for investigation. The medical men of the past did wonderful things for humanity and those now living are doing more wonderful things. Great problems that concern the welfare of the people confront us. The question of inebriety is receiving some consideration at this time. The drink habit which has caused so much sorrow and disease and crime, which has sent so many of our most gifted men down to death, we trust will ere long be solved, and in its solution the medical profession will play an important part. We recognize the drunkard's condition is a pathological one, and that all the chain-gangs and prisons of earth will not reform him or aid him one whit in overcoming the habit. In his address before the Medical Society of Virginia some years ago, the President, Dr. Joseph A. Gale, aptly remarked: "Every member of this Society has personal knowledge of individuals who are so addicted to the drink and drug habit, that they are utterly beyond the power of self-control, shattered wrecks, who have become burdens to their families, and often a distressing and menacing presence in the community in which they live. There ought to be state asylums for the confinement, treatment, cure and restoration to their families of all such persons. Such institutions would not only be of incalculable value to the unfortunate sufferers themselves, but would afford immeasurable relief to their families, and tend most powerfully to prevent others from becoming similarly affected, thus greatly improving the general moral tone of the people." And he adds, "I am of the opinion that if a suitable bill were drafted, and presented to the Legislature, and its passage properly urged upon it by the medical profession, it would be favorably received and acted upon, to the very great mental, moral, and physical improvement of our people." Surely there are mighty good reasons why the members of our profession should stand up and put forth a determined effort to crush this great source of disease and destroyer of human life.

Concentrated action on our part would accomplish much in the way of checking the ravages of this enemy of health; therefore, I ask, would it not be wise for the Roanoke Academy of Medicine to act upon the suggestion of Doctor Gale, memoralize the Legislature on the subject, and thus put itself on record as the pioneer medical body in Virginia taking this step.

The man engaged in the practice of medicine sees all sides of human nature, and many things occur to nauseate and disgust him. The thief, the liar, the scoundrel, "the wolf, in sheep's clothing," are often in evidence. He comes in contact with men so little and low and vile, that at times he has no doubt concerning the existence of Beelzebub, nor of the presence, somewhere in the universe, of hell, where the damned burn and howl for their deeds of evil. He comes in contact with strange and ungrateful people. Cure a sick dog and he will thank and love you. Spend your time and money and skill in curing some people, and they will not only fail to remunerate you, but will abuse and villify you; so that often the doctor's faith in humanity is shaken, and he feels inclined to seek a lodge in some vast wilderness, away from the haunts and habitations of man.

But my pencil is transcribing unhealthy thoughts: Let me say that when the doctor begins to ponder upon the weaknesses of human nature, to the exclusion of the true, the beautiful and good in man, he himself is becoming psychologically pathological, and is in need of physical and mental quietude. This leads me to remark that every medical man who has been practicing his profession for some years should spend at least one month of every twelve in recreation, relaxation and rest. When on his vacation he should throw aside every professional care,—forget the fact that he is a doc-

tor—and enjoy himself. For the town doctor, there is no place like the country—the streams—singing and dancing on their way to the sea; the fields of green, the lowing herds, the simple life; the reading, the intercourse with congenial friends, the nights of unbroken sleep—these will soothe and charm and strengthen, and he will return to his work an optimist of optimists. He will see goodness and generosity in men where before he could only see evil and selfishness. His faith in humanity, temporarily shaken, is restored, and he believes that exalted character, truth and honesty predominate in mankind, and that in the end these will triumph.

THE RELATION OF THE PHARMACIST TO THE PRACTICE OF MEDICINE.*

By WM. C. MARSHALL, Ph. G., Staunton, Va.

Pharmacy has been well called the handmaiden of the practice of medicine. For it is the pharmacist who must furnish the physician his armor and prepare for him his remedies with which he is to combat disease; and like knights of old when they wore the armor of Milan, felt confident in their skill to overcome any danger which they might encounter.

So the doctor of to-day with his splendid preparation for his chosen profession feels that if his armor is like that of Milan of old, the best that can be made, he can go into the fight for life with confidence in himself and his ability to relieve his patient.

It is the duty of the pharmacist to see that all articles supplied on prescription, are the best quality, and not only the best quality, but they should be prepared "S. A."; for it is very easy to have the best quality, but if not prepared properly, how easy it is to do harm where good was hoped for.

Take for instance an ointment to be applied to some irritated surface, or in the eye. This ointment should be perfectly smooth and free from lumps, for much more harm will be done by a poorly made ointment in such a case than the good which was hoped for. It is in such a case that the training and equipment of the pharmacist comes in. The knowledge that a drop of water, alcohol or olive oil, as the case may require, will make this or that a perfect ointment is not set down in the Formulae and is only known from practical experience in the work.

The duty of the pharmacist is to prepare the remedies exactly as ordered by the doctor and not to practice medicine for which he is not qualified. The treatment of so-called private troubles should be left to the physician, as the complications are many and often very serious, and parties certainly should not be treated or advised to use those noxious remedies we see so often advertised in such vulgar ways and holding out promises of health in from one to five days, which both the doctors and druggists know to be untrue.

I well remember that, when I had been in the drug business for about a year, I believed that I was about the best doctor in town and was fully qualified to give you all many points on the practice of medicine; and now that I have had twenty-five years at it, I find that I have forgotten all that I used to know at that time of the practice of medicine and only know how to make an ointment or a pill as I believe it should be made.

I must bring your attention to a book which I believe is much neglected, namely: the National Formulary. This book was compiled under the auspices of the American Pharmaceutical Association and contains all the best formulæ of this country; every class of preparation is included in its pages and when made by a competent druggist, they are elegant preparations and you know exactly what is in them. I wish especially to call your attention to the "N. F. Ess. Pepsin" and "Elixir of I. Q. and S." I do not think I have ever seen any other of these products quite so fine, and there are many others which are just as elegant as these. I earnestly hope that this splendid book will come into greater use for I know of nothing that gives a druggist more pleasure than for the doctor to speak well of his preparations; and I believe that preparations made by a competent druggist are better than the "factory made" as any man must take more pride in his own make and see that they are as good as possible.

There are many formulæ in this book which take the place of articles now on the market which are getting a large sale to the general public simply from becoming known by the patient being able to read the prescription. The liver-

*Read before a joint meeting of the Doctors and Pharmacists of Augusta County at the meeting of the Augusa County Medical Society held at Staunton, Va., May 5, 1909.

salts which are having such a large sale now are only known to the public through this means. These salts are only composed of Pot Bicarb., Magn. Sulph., Sulph. Soda, Cit. Lithia, Tartaric Acid and Soda Bicarb. and Sugar. Any druggist who knows his business could very easily make these, and the doctor could as easily direct the amount of each that he wished and the patient would never know what he was taking and so could not tell his friend to take "Sallie So and So."

I hope to see the day, and that before long, when the druggist will work together with the physician, all doing their best for the advancement of the practice of Medicine and the eradication of disease.

You, gentlemen, have chosen the noblest profession, save one. I well remember many noble men who have gone before, worn out and broken down by the hard work and trials demanded by your profession. But the memory of them is ever green, kept so by the recollections of the many deeds of charity, acts of kindness, words of cheer, and sympathy which they distributed as they passed through this vale of suffering. I never asked a doctor to do something for a person who was too poor to pay who did not do it gladly. God bless the doctor!

West Frederick Street.

Proceedings of Societies, Etc.

AMERICAN PROCTOLOGIC SOCIETY.

The eleventh annual meeting of this Society was held at Atlantic City, N. J., June 7 and 8, 1909. The President, Dr. Geo. B. Evans, of Dayton, Ohio, in the chair.

Officers elected for the ensuing year: President, Dwight H. Murray, M. D., Syracuse, N. Y.; Vice-President, T. Chittenden Hill, M. D., Boston, Mass.; Secretary-Treasurer, Lewis H. Adler, Jr., M. D., Philadelphia, Pa.; Executive Council: Geo. B. Evans, M. D., Dayton, Ohio, Chairman; Dwight H. Murray, M. D., Syracuse, N. Y., Louis J. Hirschman, M. D., Detroit, Mich.; Lewis H. Adler, Jr., M. D., Philadelphia, Pa.

The place of meeting for 1910 is St. Louis, Mo. Headquarters:—Planters Hotel. June 6 and 7, 1910.

The following were elected fellows of the society:—Dr. Chas. S. Gilman, 419 Boylston St., Boston, Mass., Dr. Donley C. Hawley, Burlington, Vt., and Dr. Frank C. Yeomans, 19 E. 45th St., New York City, N. Y.

President's Address—"Progress in Proctology."

By GEO. B. EVANS. A. M., M. D., Dayton, Ohio.

Not many years since, the creation of proctology as a specialty was frowned upon; for an indefinite period what was known of and what was done for diseases of the rectum was largely empiric, and not due to special knowledge or scientific study.

A few of us, at least, can remember when it was the rule among general practitioners to make no special effort to determine the pathology of diseases of the rectum; in fact, it was believed unbecoming the dignity of a high-classed, high-toned medical gentleman to so lightly esteem modesty as to ask for the privilege of seeking the naked truth. Without attempting to make a diagnosis, opium and lead wash, with catharsis, was deemed a sufficient treatment for any case. Little was taught in medical colleges of these diseases, for little was known and no special desire to learn much concerning them seemed to exist. But, fortunately in the natural evolution of this specialty, this ignorance and indifference in the main has been eliminated, and this field of work has assumed that of an accredited and justifiable specialty. No longer do we have to contend with the non-recognition of serious pathology, because of interposed modesty, ignorance and criminal indifference. A knowledge of the importance of being able to diagnose and treat intellignetly diseases of the rectum is now considered essential for every general practitioner, and all this as a result of the creation of proctology by men who have made special effort to develop this field of work. The credit is due to such men as Adler, Allingham, Ball, Gripps, Edwards, Earle, Gant, Martin, Pennington, Kelsey, Mathews and others. To them are we indebted for progressive proctology.

As a matter of course our pathology of this area is of necessity a modern pathology, and our knowledge of valves, varicosities, neoplasms, ulcerations and suppurations, are not based on hypothetical ideas of a quarter of

a century since, but instead on the rather exact revelations of laboratory findings. The import of the presence of staphylococci, gonococci colon bacilli and tubercle bacilli, is equally of as much importance to the rectal surgeon, as is the microscopical proof of the malignancy or benignity of a bit of tissue. With what greater assurance the proctologist approaches examinations of rectal diseases than did the physician of some years since. With a wide open field, if necessary, the aid of anesthesia, the protoscope and the laboratory, there is usually not much difficulty in making a diagnosis,—a diagnosis inseperably linked with its dependents,—treatment and prognosis. Under the influence of progressive proctologic work, ignorance, and indifference to the recognition and treatment of rectal diseases is rapidly disappearing from the average medical man, as well as from the average layman. As a result of this the sum total of human suffering is immeasurably lessened, and individual existence is not so frequently abridged. The victims of rectal diseases are to be congratulated that this branch of science, or pseudo-science, has sufficiently advanced, that it now occupies the serious attention of the most progressive and intelligent men. The Lister methods of that da- have been so changed and improved that they now seem very crude. The value of thorough cleanliness, asepsis, and the antiseptic influence of certain drugs, is of immeasurable value. It is now understood that the recto-anal area can be placed in a surgically clean condition, and that there need be no fear following operative interference.

Sometimes it would seem that the danger of the uses of an anesthetic is too lightly thought of, and consequently, the mortality rate is increased. Local anesthesia, under cocaine infiltration, for the most part, is satisfactory, and is a great convenience to the operator and a life-saving narcosis in many instances.

The palliative treatment of hemorrhoids by proctologists is largely a matter of enforcement, viz: where they are not permitted the opportunity to relieve by radical methods. The operative methods of removing hemorrhoids are so well understood, simple and effective, that it is foolish to attempt to relieve them by drugs or palliative measures.

The Allingham, or ligature method, when correctly and carefully performed, is generally applicable, but is not so free from pain and so quickly convalesced from as the clamp and cautery method. Many regard the last mentioned method as the one to be preferred. I believe, however, that the enucleation method approaches nearest to the ideal in results, and that the retention of the plug is not so painful as some would have us believe.

Protoscopic examination is of importance, and is a distinct advance in rectal work. It is of great assistance in determining disease beyond discovery by ordinary methods. It is of distinct service in diagnosis, and of great value in aiding treatment in not a few conditions.

There is more hope for the ultimate cure of tubercular conditions; our better understanding of what environment means to these people will go far toward helping them to recovery, and there is not so much reason for a delayed recognition of the condition, which is of paramount importance.

I believe there is possibly a better understanding of syphilitic conditions, ulcerations, infiltrations and strictures, but the eternal dependence on anti-syphilitic treatment to resolve hyperplastic tissue is not so conspicuous, and progreesive workers in this field realize that incision and excision are often necessary.

Concerning malignant and benign growths, the surgical rules that apply in other anatomical regions apply here. Early discovery and early removal is the only hope, as we all know, in malignant conditions, and as an advance, the removal of cancerous growths not within easy reach from below may be dealt with from above of suprapubicly. And just here it may not be inopportune to remark that it is to be believed that ere long it will be realized by the average physician that the removal of the rectum per se, is not as disastrous a matter as it is sometimes made to appear, especially since it is known that muscular transplantation will preserve more or less perfectly the function of the sphincters. The development of the technic essential to produce sphincteric power, will relieve rectal extirpation of one of its most unpleasant features and render less hesitant many sufferers who should have the benefit of the operation.

Another matter of progressive interest is that colonic or rectal ptosis is amenable to intra-

pelvic or intra-abdominal fixation, bringing relief that in some instances cannot be hoped for by any other method of interference.

After all, the most encouraging sign is that the profession recognizes the fact that proctologists have a legitimate right to exist as specialists, and that diseases in the ano-rectal region deserve the same consideration as elsewhere. With the elimination of indifference, estheticism, modesty, the more universal belief in the necessity of early examination and diagnosis, we can but hope for greater progress and more relief to suffering humanity.

Gentlemen, when I consider the personnel of this Association, I am quite confident of the perpetuity of proctology as a distinct entity and am equally sure the progression in this special field of work will be in keeping with that in other specialties.

"A Review of Proctologic Literature from May, 1908, to May, 1909."

By SAMUEL T. EARLE, M. D., Baltimore, Md.

Among the interesting conditions referred to in the review by the author, were the following: "Congenital Idiopathic Dilatation of the Colon' (Hirschprung's Disease). In Dr. Finley's report of his case he reviewed the literature of the subject to January 1, 1908, and collected some two hundred and six cases, after which he stated that while to Hirschprung belongs the credit of having first called attention to this disease, a number of cases had been found in the literature antedating his classical description. In the article Dr. Finley discussed the various hypothests as to the etiology of the disease and some ten theories, which have been suggested from time to time, as the causation of the malady, including that of hypernutrition, which was the author's principal theory. His conclusions as to the etiology of the disease were that no one theory apparently explained every case; that each one explains some.

The symptomatology was described and a complete clinical picture of the disease given with a list of a series of cases discussed in the Johns Hopkins Hospital,—eleven in all. Regarding the treatment, the author concludes that no one plan seems applicable to all cases and suggests the method employed in his own case as perhaps the one most applicable to the large proportion of cases, to wit,—a preliminary enterostomy; then a colo-colostomy some months subsequently; finally a complete excision of the affected portion. This artificial anus is left open until after the success of the preceding steps are assured when it should be closed under cocaine anesthesia.

Dr Earle in his report alluded to another case of *"Idiopathic Dilatation of the Rectum and Colon as far as the Hepatic Flexure,"* which was reported by H. Mosely Fletcher, M. D., and H. Betham Robinson, M. S.[1]

Another case of interest reported was that of a *"Sarcoma of the Rectum in a Boy"* aged ten years, by Cecil Rountree.[2] The pathological examination showed the tumor to be a mixed cell sarcoma. Of five hundred and ninety-six cases analyzed in the Cancer Research Laboratory, of the Middlesex Hospital Reports, there were only six cases under thirty years of age,—the age of the youngest, a boy of sixteen years, who had a sarcoma of the rectum. There are likely to be many metastases in sarcoma of the rectum. This malady is rare at any age.

Attention was called to the method of Dr. Dudley Roberts, of Brooklyn, N. Y.,[3] for *"Gradual Painless Dilatation of the Anal Canal by Dilatable Rubber Bags,"* which appealed to Dr. Earle forcibly as a very satisfactory means of accomplishing the purpose designed.

Attention was called to the article of Dr. Charles O. Files, of Portland, Maine[4] in which he considers that there are two important factors that should be studied in connection with the treatment of pruritus ani. There are an analysis of the contents of the rectum and the physical condition and mechanical efficiency of the sphincter ani muscles,—external and internal.

The normal feces contain about 73 per cent. of water. This water holds in solution various volatile, fatty acids, and probably other irritating excrementitious substances. During the retention of the feces in the rectum a considerable portion of the water disappears. In prolonged constipation, the feces become hard and dry, some of the fluid passes by osmosis into the cellular tissue about the anus and thence to the skin. The liquid feces are often irritating to the mucous membrane of the anus, and causes an intense burning sensation. When

1. Clinical Society's Transactions, Vol. XLI., p. 80.
2. Proceedings of Royal Society of Medicine, February, 1908.
3. The Medical Record, Vol. 72, p. 985.
4. New York Medical Journal, Vol. 87, p. 1154.

this acrid solution is absorbed into the cellular tissue, it causes an irritation of the skin, and we call that irritation, pruritus ani.

The sphincter muscle as long as it remains in a normal condition prevents the passage of any appreciable amount of fluid through it. When, however, the action of the sphincter is made somewhat irregular by the pressure of a hemorrhoidal condition some of the fluid leaks through the anus and causes pruritus by direct contact. The skin about the anus is often found to be moist in persons having hemorrhoids.

Dr. F. W. Dudley, of Manila, P. I. [5] reports a *"New Bloodless Method of Amputating the Anus and Rectum."* A description of the same being given.

Dr. W. Ernest Miles,[6] reviews the *"Perineal Excision for Carcinoma of the Rectum, and of the Pelvic Colon"* and states that so far as he has been able to gather from the literature on the subject, the technic of previous operations seems to have failed in one important respect, namely, the complete eradication of the zone of upward spread of cancer from the rectum, whereby the chance of recurrence of the disease above the field of operation can be distinguished if not entirely obviated. In his personal experience of fifty-seven such peritoneal operations, he found that recurrence took place in periods from six months to three years in fifty-four instances.

In order to ascertain the cause of his failures he made a post-mortem examination of such of his patients who died and found that recurrence appeared in situations that were beyond the scope of removal from the peritoneum, namely; (a) the pelvic peritoneum; (b) the pelvic mesocolon; and (c) the lymph nodes situated over the bifurcation of the left common iliac artery. He considers that this area constitutes the zone of the upward spread of cancer of the rectum, the removal of which is just as imperative, as is the thorough clearance of the axilla in cases of cancer of the breast, if freedom from recurrence is to be obtained.

The appreciation of this important fact, induced him two years ago, to abandon the perineal methods of excision of the rectum and to substitute therefor, an abdominal method, comparable to those methods of performing adbominal hysterectomy known as the Wertheim and the Kronig-Wertheim. He then gives the technic of his operation in full, and has formulated what he considers certain essentials, which must be strictly adhered to, if satisfactory results are to be obtained, namely: (1) that an abdominal anus is a necessity; (2) that the whole of the pelvic colon, with the exception of the part from which the colostomy is made, must be removed because its blood supply is contained in the zone of the upward spread; (3) that the whole of the pelvic mesocolon below the point where it crosses the common iliac artery together with a strip of peritoneum, at least an inch wide on either side of it, must be cleared away; (4) that the group of lymph nodes situated over the bifurcation of the common iliac artery are in all instances to be removed; and lastly (5) that the peritoneal portion of the operation should be carried out as widely as possible, so that the lateral and downward zones of spread may be ecectively extirpated.

B. G. A. Moyinham, M. D., Leeds, Eng.,[7] calls special attention to the *"Frequent Recurrences After Removal of Carcinoma from the Upper Rectum and Sigmoid,"* and also to the necessity of inguinal colostomy on account of the sacrifice of a large portion of the bowel in perhaps a large majority of cases.

"Treatment of Pruritus Ani, with a Consideration of its Pathology and Etiology."

By WILLIAM M. BEACH. A. M., M. D., Pittsburgh, Pa.

The following conclusions were drawn by the writer:—

1. That pruritus ani occurs in mild and severe forms; mostly in middle life; the mild type with simple pruritus, the severe type with marked eczema and skin changes.

2. Certain aberations in general metabolism, or in adjacent structures are simply incidental and should be considered as complications.

3. Intra-rectal growths, as hemorrhoids, adenomas, etc., or the presence of parasites are contributory.

4. The distinct pathogenesis of pruritus ani consists of single or multiple burrowings from the anal pockets, emitting a serous or sero-pur-

5. Journal of American Medical Association, Vol. 51, p. 991.
6. London Lancet, 1908, Vol. 2, p. 1812.
7. Surgery, Gynecology and Obstetrics, 1908, Vol. 6, p. 463.

ulent substance, which sinus may be complete or blind and is always accompanied by proctitis, and frequently by cryptitis, and small ulcers at the ano-rectal line.

5. The sinuses when complete are the sequelæ to an abscess history, but the origin of the blind recesses is in doubt, and yet it is not unlikely due to an infection by the colon bacillus.

The treatment is surgical for the purpose of obliterating the sinuses, correcting a rigid sphincter when necessary, and curing the proctitis and ulceration.

6. Gastro-intestinal and general metabolic disturbances must be met by rational measures.

Pruritus Ani—Its Etiology and Treatment.

By T. CHITTENDEN HILL, M. D., Boston, Mass.

This writer said he was convinced that pruritus ani was practically always caused by some local lesions of the pelvic colon or rectum, which produced as unnatural moisture about the anal region.

He said the most common sources of irritation, in the order of their frequency, were as follows: (1) Superficial ulcerations and abrasions of the anal canal. This lesion he found in about 75 per cent. of all cases and attributed the frequency of its occurrence to the method of fusion of the procto-deum with the blind end of the bowel. (2) Rectitis and sigmoiditis, which are the sequelæ of habitual constipation, often bring about a pruritus, since the passage of flatus allows a small quantity of mucus to escape. (3) Hypertrophied anal papillæ and inflammation of the crypts of Morgani are more often the cause of pruritus ani than is generally admitted. (4) Small polyps of the anal canal, protruding internal piles, prolapse of the rectum and anal fissure, do occasionally produce itching about the anus, but it is exceptional to find them the sole cause of chronic pruritus ani.

He stated that in order to attain permanent results, it was essential that the treatment be directed to the removal of the exciting causes. At the same time the skin in the immediate vicinity of the anus should receive appropriate treatment since it is nearly always in a state of acute inflammation from scratching or so much infiltrated and thickened as to require stimulating applications,—nitrate of silver and ointments, in order to bring about a return of a normal epidermis.

"Ball's Operation in the Treatment of Cases of Pruritus Ani with Report of a Case in Which Necrosis of the Flap Occurred."

By LOUIS J. KROUSE, M. D., Cincinnati, Ohio.

The case reported was that of a severe intractable case of pruritus ani in a man well advanced in years who underwent the above operation for pruritus with the result of having the anal flap necrose. He went into the pathology as to the cause of the necrosis and came to the conclusion that the trouble lay in the poor supply of blood to the anal flap. He claimed that there is no anastomosis between the blood vessels from within the anus and those of the skin. The writer called attention to the fact that Sir Charles Ball's operation has recently been modified so as to prevent sloughing of the anal flap.

A new method of operating was proposed by the author which is somewhat different from that of Sir Charles Ball and that of Dr. Tos. Chas. Martin, and consists: first, in doing away with the eliptical incision which cuts off the greater part of the circulation from the diseased area; and secondly, in making six to eight linear incisions through the skin into the subcutaneous connective tissue. These linear incisions, beginning at a point outside of the point of irritation, follow the course of the radii of a circle whose center is the anal canal. The skin lying between the adjacent radii are then undercut until the whole affected area is undermined. Should the dissection be difficult and more room be needed, every alternate flap could then be loosened at the anal margin and dissected outwards toward the periphery. After all the adhesions are loosened and the bleeding has been stopped, the parts are again replaced and sutured.

The advantages of this operation over the original one of Ball lie mainly in the better nourishment of the flap. The blood must come from the circumference and must radiate towards the anal canal.

"A Consideration of the Prophylaxis and Treatment of Cicatricial Rectal Stricture."

By ALOIS B. GRAHAM, A. M., M. D., Indianapolis, Ind.

Opinions were based upon the results obtained in the tratment of fifty-five cases. He stated

that prophylaxis implies a careful rectal examination; a careful rectal examination implies an early diagnosis; an early diagnosis implies a correct treatment, and correct treatment implies the prevention of a stricture.

When cicatricial rectal stricture is diagnosed, surgical intervention is indicated. In cases where there is no danger of infection, excision should be the choice of all the surgical measures at our command. If successful, its results are ideal because of the fact that it effects a cure by the complete removal of the stricture. In cases where it is not safe to practice the excision method—(and there are many such cases,)—complete posterior proctotomy or colostomy, either alone or combined, should be performed. While neither of these surgical measures have effected an authentic cure, yet they undoubtedly can and have effected a symptomatic cure. Gradual dilatation should be employed only in cases of small annular stricture. The excision method needs no defense as its results are all that could be desired. As for the other surgical methods, the writer was not at all pessimistic as to the results which can be obtained, if they are followed by correct and systematic after treatment.

"The Use of Spinal Anesthesia in Rectal Surgery."

By COLLIER F. MARTIN. M. D., Philadelphia, Pa.

Eighty-seven cases were reported in which tropacocain and stovaine were employed. The technic was given in detail. The method is not recommended where the hips of the patient have to be elevated.

Of the 87 cases, 57 were either frankly tubercular or the condition was suspected, 16 were alcoholics, 4 had anemia with from 35 per cent. to 60 per cent. of hemaglobin, 2 had sepsis, 2 cachexia, 2 were suffering from general debility and old age, 3 had cardiac complications and one refused to take ether.

The conditions operated upon were as follows: abscess and fistulæ 54, hemorrhoids 21, rectal stricture 2, sacral sinus 1, fissure with fistula 2, gangrenous cellulitis 2, anal condylomata 2, rectal carcinoma (perineal excision) 2, and Ball's operation for pruritus ani 1.

The only complications observed were headache 18 times, coming on from 1 to 3 days after operation. Only three cases had severe headache lasting over one or two days. A few cases complained of some stiffness of the back of the neck and shoulders. One patient developed a temporary oculo-motor palsy which recovered under treatment. In two cases spinal fluid was not obtained because of the difficulty in inserting the needle with spinal deformity present.

Spinal anesthesia was selected in cases with pulmonary tuberculosis to avoid the congestion following the use of ether. Alcoholics were also found easier to manage than when ether was used.

Under spinal anesthesia, the sphincters are completely relaxed, there is no muscular spasm and there is an entire absence of the venous engorgement and swelling of the tissues so often seen while the patient is under ether. Bleeding is not as profuse and is more easily controlled, since all parts of the rectal cavity are as accessible as their anatomy will permit. The complete muscular relaxation reduces the traumatism to the tissues.

Spinal anesthesia is at its best when used in operations about the rectum and genito-urinary tract. Careful selection of cases, drugs of uniform strength and purity, and a careful technic will do much to re-establish the confidence of the surgeon in this method of producing anesthesia.

(*To be continued*).

Correspondence.

Travelling Medical Libraries.

Mr. Editor:—I desire through your columns to call attention—especially of the country members of the Medical Society of Virginia—to a resolution which I intend to present at the coming session of same, D. V.

The gist of same, for the sake of brevity, is to get the Society, with the co-operation of the State Librarian, to inaugurate the travelling library idea, with standard medical works, i. e., any member can secure a standard work on medicine, keep it for at least two weeks, and then return it. All the expense to which he need be put is simply the return postage.

The great value of such a work to the ambitious, up-to-date young physician is self-evident, and this idea, or a modification of

same, has been successfully worked in New York for sometime.

A similar resolution was offered by myself at the last meeting of the Society, but the Executive Council—apparently not fully realizing what the adoption of such resolution might mean, especially to the country practitioner where large libraries are not readily available—while refering to it as a good idea, passed it by as not feasible at that time.

RAMOND D. GARCIN, M. D.
Richmond, Va.

Book Notices.

Pocket Formulary. By E. QUIN THORNTON, M. D., Assistant Professor of Materia Medica, Jefferson Medical College, Philadelphia. Ninth edition, revised. Lea & Febiger. Philadelphia and New York. 1909. Leather flap and pocket. $1.50 net.

Calendars for 1909 and 1910 are on inside cover. Weights and measures, the metric system, important incompatibilities, poisons and antidotes, and a table of doses follow. Then comes the "pocket formulary." Diseases and conditions are named alphabetically. Under each such heading the most approved prescriptions are given, and the indications when this or that formula is better than another. This part of the book occupies about 270 pages. It can be conveniently carried in the physician's hand grip, and will prove of daily service to the doctor who consults its pages—old or young.

Vaccine and Serum Therapy. By EDWIN HENRY SCHORER, B. S., M. D., Assistant Professor of Parasitology and Hygiene, University of Michigan, Columbia, etc. Illustrated. St. Louis. C. V. Mosby Co. 1909. Large 8vo. 130 pages. Cloth, $2.

The large type of this book is conducive to reading. It includes a study of infections, theories of immunity, opsonins, and opsonic index. It is a book well worth reading by the older practitioner and study by the younger. It is not written from the standpoint of an enthusiast, but shows evidence of patient study and observation and experience. It has eight divisions or chapters—discussing in regular order Infections, Immunity, Opsonic Index, Criticisms and Modifications of Wright's Opsonic Index, Determinations, Opsonic Index in Health and Disease, Nature of Opsonins, Vaccine Therapy, and Serum Therapy. There is instruction on every page, and valuable practical suggestions for everyday use are given. It is a good text book for every medical college course of lectures. Members of boards of health and laboratory workers will also be interested in it.

Editorial.

History of Modern Tuberculosis Sanatoria.

The *Scientific American,* July 31, gives an account, from the pen of Dr. John B. Huber, of the history of modern tuberculosis sanatoria, which does not seem to be generally known. Bodington began, in Sutton Coldfield, England, an institution for the treatment of consumption, on principles natural, rational and successful. He insisted on generous diet, fresh air—day and night; the air within the house was to be as pure as that without, nor could it ever be too cold for a consumptive patient. Here, then, was established in 1840—nearly *seventy years ago*—probably the first tuberculosis sanatorium in the modern sense. But what was its fate? Bodington was regarded as a lunatic, and was contemptuously opposed by many a colleague; his patients were driven from his institution, which he thereupon turned into an asylum for the insane, in which we now believe many of his neighbors might fittingly have found an abiding place.

Next in the history of sanatoria comes Brehmer, who having been attracted by the ideas of "that obscure country doctor," in England, determined, with true Teutonic stubborness, upon making them enduringly effective. Like Bodington, Brehmer had to endure the lot which so frequently falls to genius and altruism; he also met with much opposition and ridicule, but he persisted until he convinced both his profession and the laity of the soundness of the methods he elaborated. The result is the institution established at Goerbersdorf, in Prussian Silesia, which has from small beginnings, become of world-wide beneficence and influence. It is due to Brehmer's grit that we now have tuberculosis sanatoria over all the civilized world.

It has been demonstrated beyond all question that the properly conducted tuberculosis sanatorium can hurt no one; on the contrary,

it is beneficent from every conceivable viewpoint. Much opposition of the people to such institutions in their communities is based upon ignorance of the nature of infection of tuberculosis. Such infection is not air borne as in scarlet fever or measles. Practically speaking, it is conveyed direct from the consumptive to his fellow-beings only through the sputum; so that when this sputum is properly disposed of, there is no danger of tuberculosis infection.

With regard to the danger of infection to the community in which a well-regulated sanatorium is placed, we have but to cite the experiments made at Saranac Lake, where Trudeau established the first American institution upon the modern principles of phthisiotherapy. All the dust in a room of one of the cottages occupied by consumptives was gathered, and a culture made from this dust was, when injected, was insufficient to cause tuberculosis in a little guinea pig. A scientifically ordered sanatorium, rather than a menace to any community is, on the contrary, a decided influence making in it for healthful living in every possible meaning of the term. Its neighbors learn to spit less, to keep their windows open day and night and to live the hygienic life generally. The tuberculosis sanatorium has invariably raised local health standards. The courts of Massachusetts, North Carolina and Virginia have decided that a modern tuberculosis sanatorium is not a menace to the health of a community, or to the property in its vicinity.

Value of State Medical Society Volumes of Transactions.

Last year we had occasion to consider this subject, but the matter appears of such practical importance to State societies that we are led to refer to the matter again.

Most of the State medical societies have long since abandoned the issuing of annual volumes, and have established State medical journals as the media for their publications, giving in detail the minutes of the sessions, repeating the Constitution and By-Laws year after year, the register of members, the reports of committees —even on the most trivial matters, etc. Such things very materially curtail the interest in these journals, so that they have become almost local in their patronage. To make these journals as readable as possible, some State societies are short-sighted enough in their policy to prevent the publication of papers read before them elsewhere than in their own State Society medical journals. So that the best of such papers are limited in their circulation to the members of the respective Societies.

Independent State Medical Journals have a much wider range of usefulness; for while they naturally look constantly after the interests of their respective State societies, of which the greater part of their members are naturally patrons, they have also a large out-of-the-State circulation. Thus, such journals give to readers the best papers and discussions that are presented before their respective societies, and they also bring to their own State profession contributions by many of the best authors in other States. These journals become known throughout the length and breadth of the country; and because not lumbered up with every dry detail of minutes which may be printed in pamphlet or transactions form and which cannot interest the outsder, they become popular. It is proper for them to give space to every essential item of their own State and the local society proceedings; for from them useful suggestions may be obtained by others. So that, it is not to the interest of State medical organizations to establish journals nor to restrict their publications to such journals. Let authors of papers have the privilege of selecting their own journal media for their own publications, though as a matter of record such papers should likewise be published in the society medium.

Some of the volumes of *Transactions* of societies that still publish them are elegant in their make up—both in type and binding —and we cannot help feeling, when they come to us, that there has been a great waste of money in their publications. Who reads them? As a rule, they are issued eight and ten months or more after the session at which the papers were contributed—practically on the eve of the next annual session of the Society, in the proceedings of which professional interest of the State is becoming centered. The desirable papers in such volumes have long since been published in the medical journals of the country; so that even members of the Society have lost interest in the volume, and lay it aside for a more convenient season to examine, which never comes. Hence, in a year or two they are thrown aside in the rub-

bish pile to make room on the book shelves for more recent books.

For those relatively few members of a State Society interested in preserving files of the annual *Transactions,* it may be all right to publish volumes, but let them be gotten up in as economical a style as is consistent with their proper preservation; for at most they become books for reference, and not for reading in future years.

For the reasons given, we believe the Committee on Publication of the Medical Society of Virginia acted wisely in adopting the style in which the *Transactions* of the session of 1908 were issued; and this was done at a cost well within the ability of the Society to meet. Had this volume been published even in the same size type page, with "leadings," etc., as for 1907, the total cost of publication, including mailing, etc., would have been nearly three times as much, and would have more than exhausted the treasury of the Society. As it is, the volume is one of a little more than five hundred octavo pages, neatly bound in cloth, contains every paper read during the session of 1908, with good stenographic reports of the discussions, etc., and in every way well serves the purposes of the Society. Whoever may be interested in any paper, discussion, items of minutes, reports of officers, the Constitution and By-Laws, Alphabetical Register of Members, etc., as relating to the last Richmond session, can easily make reference to the same by consulting the pages of Contents.

As an index of the lack of interest, even of members of the Society, in the publication of these *Transactions,* notwithstanding the much delayed publication, we recall but eight requests for them from the entire membership of about 1,555. Two of these requests have come from authors of papers and one from a member who has moved to a far Western State. Of course, we are not referring to inquiries by certain officers of the Society itself, to whom the volume is useful in preparing their reports for the coming session, etc.

Thus we are forced to the following conclusions:

1. Distinctive State medical society journals are not conducive to the general good of the profession of any State.

2. Independent medical journals, in sympathy with their State Medical Societies, are the better media for the interests of the profession of their respective States.

3. Volumes of *Transactions* are useful for the preservation of the proceedings of a Society —including, of course, the publications of papers, discussions, minutes, register of members, etc., and while neatly bound for filing and for reference in future years, they should not be gotten up in the more expensive style of the printer's art.

4. As there is very little demand for them, published so long after a session, they are not read, and serve practically only the purpose of a record of the session which they report.

The Augusta County Medical Society

Held its annual meeting in Staunton, Va., on August 11. Interesting papers were read by Drs. W. F. Hartman, of Swoope, and Kenneth Bradford and M. J. Payne, of Staunton, after which the following officers were elected for the ensuing year: President, Dr. J. B. Catlett, Staunton; Vice-Presidents, Drs. F. M. Hanger, Staunton; A. F. Kerr, Greenville, and C. A. Clemmer, Middlebrook; Secretary, Dr. H. B. Spencer, Staunton; Treasurer, Dr. W. F Hartman, Swoope; Censor, Dr. H. F. White, Fishersville; Trustees, Drs. E. L. Gibson and M. J. Payne, of Staunton, and R. S. Griffith, of Basic City.

The Society voted $100 for purchasing books for the medical library which they recently established, and these with current medical literature will be kept in the Library Room in the County Building for the use of all physicians in the county. The Augusta Society is doing good work, and later, hopes to establish a laboratory properly fitted and equipped for making such examinations as the members of their Society may desire.

Norfolk County Medical Society.

We note with pleasure that this Society, which was organized June 8, 1870, now has an active membership of 98—including most of the ablest doctors in Norfolk, Portsmouth, and vicinity—with a regular attendance of from 20 to 50 members. Of the four monthly meetings, three are devoted to scientific work—one being set aside for business.

The Norfolk County Medical Society has

permanent quarters in a nicely furnished assembly room in the Physician's Office Building (a modern and up-to-date building especially equipped for physicians and dentists), and adjoining this room is a library and reading room in which are found up-to-date reference books upon all branches of medicine, as well as many leading periodicals, both foreign and domestic.

We congratulate the Society upon its good work, and trust it may be the means of stimulating some of our other county societies to greater things.

Army Medical Corps Examinations.

The Surgeon-General of the army announces that, in addition to the usual preliminary examnation Boards that assemble at various Army Posts throughout the United States from time to time, the War Department has appointed a permanent board to meet at Washington, D. C., for preliminary examination of applicants for appointment in the Medical Corps of the Army. The Board at Washington will probably hold its first session about September 7, 1909.

Physicians successful in the examinations will be given employment at Army Posts, as their services are needed, as 1st Lieutenants—salary $2,000 per annum—with the usual increase in salary after three and five years' service. With incidentals allowed, it is estimated that an additional $1,200 to $1,600 is added to the yearly compensation.

The essential requirements to securing an invitation are that the applicant shall be a citizen of the United States, shall be between twenty-two and thirty years of age, a graduate of a medical school legally authorized to confer the degree of doctor of medicine, shall be of good moral character and habits, and shall have had at least one year's hospital training or its equivalent in practice.

For further information, address "Surgeon-General, U. S. Army, Washington, D. C."

Dr. A. J. Burkholder.

In the Table of Contents for the last issue of this journal, the name of Dr. Burkholder was not published as being author of the paper on Rheumatic Fever. Though such errors will sometimes creep in, we regret that the mistake should have been made, and take this means of giving Dr. Burkholder proper credit for the article.

Dr. J. Allison Hodges,

Physician-in-charge Hygeia Hospital, Richmond, closed his Hospital during August for repairs, while he is spending his vacation in Canada. He will return to this city in time to open the Hospital for reception of patients about September 1st.

Dr. T. Jefferson Hughes,

Of Saltville, Va., sailed from New York on August the fourth, by the Steam Mauretania, to spend a year in studying at the Universities of Edinburg, Berlin and Vienna.

Dr. Truman A. Parker, Richmond, Va.,

Who has had temporary medical charge of Catawba Sanitorium for Tuberculosis, has returned to this city to resume his general practice.

Wanted—To become associated with an active general practitioner who does his own surgery. Town not less than 5,000. Am 33 years old. Graduated in 1901. Doing hospital work at present. Am prepared to do some pathological work. References given and required. Address responses to "J. H.", care *Virginia Medical Semi-Monthly.*

Location Wanted by Physician.—In a prosperous Virginia town, or would accept position as assistant to busy doctor. Have had five years' hospital experience, graduated 1902. Address E. M. C., care *Virginia Medical Semi-Monthly.*

A Sanitarium for Alcoholic and Drug Patients.

Dr. Givens' Sanitarium for nervous and mental diseases at Stamford, Conn., has a separate department for alcoholic and drug patients and the statute of Connecticut permits such patients to voluntarily commit themselves for a period not exceediing one year. The regular, systematic life, under medical supervision is excellent.

Write Dr. Givens, Stamford, Conn., for particulars.

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Original Communications.

THE PHYSICIAN AS A PUBLIC EDUCATOR.

By W. LOWNDES PEPLE, M. D., Richmond, Va.
Professor of Histology, University College of Medicin , etc.

If some one would invent a synonym for the term Preventive Medicine that would carry to the lay mind the full meaning intended, and would eliminate the implied use of drugs in preventing disease, a very long step will have been taken upon the road to better health conditions in this country.

The National Government was a long time learning the lesson of prevention, but General Wood cleaned up Cuba and convinced Washington that it paid to prevent disease. Next the Gulf States learned it, and are now saving hundreds of lives, and millions of money by preventing the annual epidemics of yellow fever.

The commercial world has appreciated it by bettering the working and living conditions of its employees.

One of the old line insurance companies actually has a plan under way to build a tuberculosis hospital for the treatment free of charge of its policy holders suffering with this disease, because they find it will pay to do it.

It takes a long time for a big new idea to get thoroughly disseminated among the people, and the function of the physician as a man to prevent disease instead of simply fighting it when it is amongst us is, to the average mind, a proposition startlingly new.

The physician has always been an educator, but the value of his services in this capacity has never been even tentatively estimated. There are in the State of Virginia about 2,000 doctors, each going daily into from five to twenty homes and having the confidence of all the family. In each home daily instructions are given as to the management of disease, the prevention of contagion and the proper care of the sick. What would such a force of lecturers cost and how could they get the ear of the people?

The relation of the physician to the people is as old as the practice of medicine. A glimpse of the new relation which we had last year in Richmond was one of the most inspiring sights ever witnessed. It was the Tuberculosis Exhibit, when thousands of people from every walk of life, eager for instruction flocked daily to the meetings to hear the practicing physicians of Richmond deliver simple explanatory talks about this dread disease. Each accepted the new relation as naturally as if the thing had been going on for years. It was splendid! The campaign of education, as conducted by the State Board of Health, with its simple bulletins of instruction, and by the public talks of its officials, should have the hearty co-operation of every physician and citizen in our State.

The individual instruction by the physician in the home of the patient, valuable as it is, is not enough. It will pay the State to encourage the study of Public Health. It is cheaper to prevent disease than to treat it in hospitals, almshouses, jails and asylums, after it is upon us.

A time will surely come when the State must see that her medical graduates are well grounded in preventive medicine, and when each is qualified to make a competent health official, if need be; when the course of physiology as at present taught in our public schools, is broadened to include instructions as to the avoidance of contagious diseases and in the maintenance of health, under conditions such as actually surround the children in their homes.

Look at the lesson of Panama—where thousands of men are daily toiling under a tropic sun in a climate heretofore regarded as the worst in the world—with a sick rate and a

death rate that will compare favorably with any locality in the temperate zone! Compare the terrific loss of life from typhoid in our army at Jacksonville, with the insignificant loss by the Japanese in Manchuria, and see what organization and prevention can accomplish. If it pays the National Government and the army to prevent disease, it will pay the State.

The physician of the near future in his capacity of Public Education, must draw closer and closer to the State.

We must prepare the student better and better as a health instructor, for his new work, and must prepare the people to help and cooperate with him.

LOCAL ANESTHESIA IN MAJOR OPERATIVE WORK.*

By EDWIN M. HASBROUCK, M. D., Washington, D. C.

Unquestionably one of the greatest drawbacks to an operation in the mind of many people is the necessity of taking an anesthetic; nor is it too much to say that with a goodly number fear of the anesthetic is far greater than fear of the operation. There are people —and we have all met them—who are perfectly willing for an operation if operation is necessary, but who hesitate with fear and trembling at the thought of passing for a time, however short, into the realm of the great unknown.

Within the past two years some eight or nine deaths have come to my notice from general anesthesia. Of these four were due to chloroform, three to ether, and one in my own hands dut to somnoform; nor is it at all unlikely that if every death indirectly traceable to the anesthetic could be gathered, those due to shock, pneumonia and kidney complicatons. the number would be greatly increased.

A noted writer has said that an anesthetic is an agent whereby a patient is carried to the edge of death and held there while the surgeon does his work; and this, shorn of its glamour, comes pretty near being the truth. It takes a skillful man to carry a person just to death's door; hold him there delicately poised for a period ranging from a few minutes to several hours—and bring him back. Even in the hands of a skilled anesthetizer, one accustomed to administering hundreds of anesthetics in the course of a year, they are never free from danger, and while it is fortunately true that fatalities are few, the possibility is ever present, and the one case in a thousand may be the next. Certain it is that the fear is ever present to the patient.

Surgical progress has made rapid strides in the last few years, more rapid than any other branch of medicine, and one of the most noteworthy has been the extending of the field of local anesthesia in to the domain of of major surgery, due largely to those indefatigable workers, Crile of Cleveland, Matas of New Orleans, and Bodine of New York.

You and I, gentlemen, can remember the time when we students were taught the use of cocaine in 4 per cent. solution, with a ligature twisted tightly about an extremity to limit the circulation of the drug through the system, and the watchful care subsequently to combat a possble toxic absorption. It is only four years since I used a four per cent. solution to amputate a finger, and remained with the patient two hours for an alarming case of cardiac depression. The wonder is that there were not more cases with more fatalities, and at the present time I cannot imagine where a four per cent. solution would be either necessary or justifiable.

Local anesthesia in major operative work has been made possible by our more perfect knowledge of the action of cocaine when in combination with that great hemostatic—adrenalin chloride,—the two together forming a combination that is retro-active, and permitting an operation with an infinitesimal amount of the former drug which until recently was considered possible only with the most profound narcosis.

Cocain in itself is a protoplasmic prism, forming with protoplasm an unstable compound which breaks down slowly, after which the tissues return to their previous condition and resume their normal function. Cocain which has exerted its anesthetic action and has entered into this combination cannot be absorbed into the circulation:—therefore, if only a minute quantity of cocain be used—just sufficient to produce anesthesia, toxemia is eliminated and only possible from the absorption of an

*Read before the Shenandoah County Medical Society, at Woodstock, Va., June, 1909.

excess which is not present. Now by adding adrenalin chloride to our solution we throw another safeguard about the patient by sealing the blood vessels, thus eliminating the last possibility of absorption, and practically abolishing all danger of cocain poisoning.

To carry out this work to the best possible advantage the solution to be used must fill four primal conditions: (a) It should be isotonic with the fluids of the body tissues; (b) it must be sterile; (c) it must contain a certain amount of the anesthelizing substance, and only just so much as to produce insensibility to pain without leaving a residue for absorption; and (d) it should be so constituted as to accomplish a maximum degree of anesthesia with a minimum danger of poisoning.

My own work in this line during the past two years has been with tablets prepared by Parke, Davis & Co., after the formula of Braun. Each tablet contains Cocain 3-4 grain; Adrenalin chloride 1-400 grain. These are sterilized by dry heat for an hour on three successive days and keep indefinitely.

One of these tablets dissolved in twelve drams of normal salt solution, gives a solution of known definite strength of approximately 1-1000 or 1-10 of one per cent. One tablet dissolved in two drams makes a one per cent. solution, and these are the only two solutions necessary.

The two methods of use are ordinary infiltration and nerve blocking. For the former the weaker solution is used; for the latter the stronger.

The technique is as follows:

It is a good idea to precede the operation with quarter grain morphine given hypodermically. This quiets all nervousness and apprehension, and while it is not a necessity, I have always found its influence for good. All of the preliminary work and most of the subsequent work will be done with the weaker solution, 1-1000, and the first step is that of skin infiltration for the initial incision. This is one of the most important steps in the method, and unless thoroughly done, pain is produced at the outset and we lose the confidence of our patient, and this confidence once lost, let me assure you, is never regained;—failure in this first stage may defeat the whole procedure.

For this purpose two or more hypodermic syringes are kept busy, the empty ones being kept filled, while the others are in use. Remembering that our solution is non-toxic we use it freely along the entire line of incision, just barely beneath the skin, producing a wheal ahead of us as we advance, and then deeply kneading the tissues so as to disseminate the fluid. On cutting down we will find the tissues blanched and bloodless and entirely without sensation. On reaching the deeper structures knowledge of nerve distinction becomes of prime importance, for by availing ourselves of Crile's method of nerve blocking, the sensory nerves are picked up one by one, and injected with a few minims of the one per cent solution, after which the entire field becomes insensible to touch. If at any time a sensitive part is encountered a few injections with the weaker solution is all that is necessary to render it insensible; and thus feeling our way along the work is brought to a successful and painless close.

A large factor in the successful outcome of the method is a knowledge of the variation in sensibility of various structures, and this is quickly learned with experience. The findings of Lennander and Braun have been borne out by my own experience and that of others. "The skin once anesthetized, there is little or no sensation in the subcutaneous tissue and muscles so long as blood vessels and large nerve trunks are avoided. Periosteum is exquisitely tender, but when cocainized, the bone beneath is devoid of sensation. Patients state that they can feel and hear the sawing but it was as if a board were being sawn while resting on some part of the body. The synovial membranes of joints are very sensitive. In the abdomen the parietal peritoneum is sensitive, but the omentum, visceral peritoneum and viscera even when inflamed, are not. Traction on the mesentery causes not only pain but nausea, and the point to which the pain is referred when pulling on the meso-appendix—the epigastrium—suggests an explanation for the early pain of appendicitis so often noticed in this region." (Mitchell)

As for the scope of the method, generally speaking, it includes all operations where the entire field can be made anesthetic. All minor operations go without saying, while in the major field, as previously stated, it reaches its limitations only with our ability to block the nerve supply.

The following operative procedures are en-

tirely feasable by this method:—Hemorrhoids, fistula, varicocele, hydrocele, appendectomy, colostomy, suture of typhoid perforation, excision of breast, thyroidectomy, excising rib for empyema, extirpating glands, both cervical and inguinal, all amputations, radical cure of all forms of hernia—both inguinal, femoral and umbilical; post-operative hernias are equally assailable with the addition of a few whiffs of a general anesthetic to deaden the pain consequent upon the pulling of a wide area of parietal peritoneum.

Obviously the method is not suited to hysterical people or very young children, in which cases a general anesthetic is to be preferred, although Mitchell has operated successfully on a girl of nine for typhoid perforation and drained the gall bladder in a lad of seven.

I am willing to concede that this method takes time, more time by far than by a general anesthetic, and for this reason is not altogether in place in a large hospital with a man with routine work to be done in a given time; but in private practice with one's own time at his disposal, the feeling that at the close the patient's condition will be all that could be desired is ample compensation for the added expenditure of time.

The following three cases in detail will serve to show the possibilities and advantages of the method.

Case I.—Last fall I was called to the country to see an old lady 82 years of age who had a strangulated femoral hernia of five days' standing with all of its attending phenomena —nausea, vomiting, etc. Her condition was bad, pulse weak with marked arterio-sclerosis and a bad heart—one of the worst possible subjects for a general anesthetic. Under the method described the hernia was cut down upon, the stricture relieved, the bowel found undamaged and returned to the abdominal cavity and the rupture closed. She left the table in perfect condition and made an ideal recovery.

Case II.—Also in a farm house—that of an old lady 78 years of age, exceedingly fleshy, weight 300 pounds She had a strangulated umbilical hernia of four days standing. She was very much exhausted, and a poor subject for general anesthesia as all such persons are. In spite of five inches of fat on the belly wall the Mayo operation was done and no pain complained of until the sac was manipulated and this was quickly controlled by a few injections around the neck. Her pulse never varied a beat throughout the operation and she had a most satisfactory result.

Case III.—Was that of an old lady 89 years of age with senile gangrene of the great toe. Amputation under cocain was done through the metatarsal bones and removing the first, second and third toes. This was performed entirely with the weaker solution. The operation, I regret to say, was not successful in checking the progress of the disease, and a second operation was done—amputation at the middle third of the leg. This also was done with local anesthesia without the slightest difficulty. No pain was experienced save through an error of my own in mistaking something else for the posterior tibial nerve and cutting that nerve without any cocain blocking whatever. The pain was excruciating and was due entirely to my faulty technique, not to the method. In this case also, I am glad to say, the patient is now living in comfort and quite free from any indication of recurrence.

Obviously, then, the field of local anesthesia is an important one; it is not offered as a substitute for general asesthesia, but as a perfectly practical alterative whenever possible and in suitable cases, and when for any reason a general anesthesia is contraindicated.

1819 *Adams Mill Road.*

PUBLIC SCHOOLS AND PUBLIC HEALTH.

By CHARLES GILMORE KERLEY, M. D., New York.

Professor of Diseases of Children in the New York Polyclinic Medical School and Hospital; Attending Physician to the New York Infant Asylum and Maternity; Assistant Attending Physician to the Babies Hospital; Consulting Physician to the Sevilla Home for Girls and to the New York Home for Destitute and Crippled Children; Consulting Pediatrist to the Greenwich (Connecticut) Hospital.

No one will question but that the good health of the community is its greatest asset, and you will further agree that this health is dependent upon the ability of the community to take care of itself and that the most necessary knowledge that a people may possess is the knowledge as to how they may maintain the highest degree of vigor and vitality. In the short school life which terminates in the great majority of the 18,000,000 school children in the United States, from the twelfth to the fourteenth years, only studies of utility should be im-

posed. One should, in arranging the curriculum of these children, "determine the relative value of knowledge."

"How to live," says Herbert Spencer, "that is the essential, not how to live in the mere material sense, but in the wider sense. The general problem which comprehends every special problem is the right ruling of conduct in all directions and under all circumstances; in what way to treat the body, in what way to treat the mind, in what way to behave as a citizen, in what way to utilize all those sources of happiness which nature supplies; how to use our faculties to the best advantage to ourselves and others; how to live completely. *To prepare us for complete living is the function which education has to discharge, and the only rational mode of judging of any educational course is the judging in what degree it discharges such functions."*

It is not my purpose to dictate to educators of the young as to how they are to arrange the school curriculum. I offer suggestions only. My position is that of one who has made a life study of the various aspects of the child problem should decide this. I have carfully observed the school life, and the after school life of many in the home, and I am in a position to tell you what the child needs from the home standpoint. Owing to the increase in the length of the school year from three months to ten months; owing to the building of large cities, to necessarily changed conditions of living among all classes, as a result of stress and competition, of social duties and amusement, to indifference and indolence, parents see comparatively little of their children—much less than fifty or even twenty-five years ago. The chief control of the child has been transferred from the home to the school, which means that the duties and responsibilities of the school have increased tremendously. I do not mention this, however, with any sense of regret. For under the kindly instruction and elevating influence of trained minds in a school of the right sort, the child is far better situated as relates to his future than he is in thousands of so-called homes.

I simply wish to call your attention to the necessity for improvement in the schools and for the expansion of school work.

Read the last annual report of the efficient and public spirited Superintendent of Schools of New York City, Dr. Maxwell, and you will learn of the possible untoward effects of the school upon the health of the child. In the report we read as follows:

"Sitting several hours a day at a desk which may not be hygienically constructed, increases such diseases as curvature of the spine, and often produces faults of posture. Defects in eyesight are certainly aggravated by work in the class-room." Eyesight, that most precious of all the senses, is impaired, according to Dr. Maxwell, in children who are forced to attend school.

In short, he continues, though the school is doing what it may with its present resources to minimize the evil effects of urban life upon children, yet the measures are inadequate because they do little or nothing for those children who are suffering from physical defects.

Dr. Gulick, formerly director of physical instruction in the public schools, writes that many thousands of children in New York City schools are being compelled to read more or less for five hours a day in artificially lighted buildings, without any consideration or investigation being made from the medical standpoint as to the effects. In the ninth annual report of the superintendent of schools, Dr. Gulick states that it appears from reports of the Board of Health, that over thirty per cent. of the children in our schools have a degree of eye-deformity sufficiently severe to interfere with their progress from grade to grade. It is reported, from sources that are apparently trustworthy, that in some schools a very much larger percentage than this, in children who have been in school for two years or more, have such eye-deformities, and that this is due to the deficient light in these buildings. These eye-deformities increase from year to year throughout school life with such regularity that it is almost possible to place a certain grade by reporting upon the percentage of eye-deformity among its members—all of which demonstrates the effects schools may exert upon the public health.

In order to correct this regretable condition of affairs, Superintendent Maxwell's suggestion, that a department of hygiene be organized to co-operate with the Board of Education, is most timely. Such a board should be made up of a skilled oculist, an orthopedist, a laryngologist, a pediatrist and a sanitarian,

who would be given power to arrange suitable type and printing for the different ages, to consider problems of ventilation and lighting, of posture, of vision, of the nose and throat, of nutrition, and growth and of general hygiene, and to direct the recreation periods. A standard of control—a health clearing-house—should be established as to what would be considered the normal requirement for the various ages.

Obviously oculists, and other specially trained physicians only, are competent to direct the various means of maintaining and restoring health to the school child, and as such, should constitute an advisory board to the Board of Education of the city.

The future health of the child and the public health, consequently may be influenced through the school in two distinct ways—through the *immediate* and *remote* effects, and which exert a life long influence. *The immediate effects* are determined by air space, lighting, heating, fire-protection and fire-escapes, seating and water supply and medical inspection. There is but one State, Massachusetts, which has a law providing for medical inspection in all the schools. Sixteen States provide for fire-escapes and fire protection. Only Massachusetts and Connecticut have established a standard of ventilation and require its enforcement. Kentucky alone, provides standards for lighting floor spaces, air spaces, seating and water supply. Only one-third of the States compel vaccination. In Indiana there is no medical inspection. The Secretary of the State Board of Health of Iowa has recently published an article against medical inspection.

It will thus be observed that the country as a whole is leaving much undone in handling the school problem.

The necessity for general medical inspection is obvious when we learn that Boston reports fifty-four per cent. defectives, New York, sixty per cent., and Sioux City, eight per cent. The range in eye-sight is about the same. Columbus, Ohio, reports about twenty-five per cent., New York about thirty per cent., while Wellesly, Mass., reports sixty-three per cent.

If the figures given as related to defectives are true, the State is sustaining much financial loss, and is greatly handicapped in attempting to educate children who are in such a physical condition that they will not profit by the instruction offered. Money and time are wasted. The expense to the State of maintaining a child in school one day, is twenty-four cents.

In our larger cities the Americanizing, the making of good citzens, of the large alien children population is dependent almost entirely upon the public school system.

A large fraction of the children that are in our city schools either themselves come from non-English speaking countries or are children of those who come from these countries. That a large proportion of the population of our great cities is made up of persons from foreign parentage is not generally realized. The facts as told in the late census in regard to some of our leading cities are as follows:

Population of Native and Foreign Parentage in 1900.

City.	Per cent. Foreign.
Boston	77.2
Chicago	77.4
Detroit	77.4
Jersey City	70.5
Milwaukee	82.7
Newark	82.8
New York	76.9
St. Paul	72.6
San Francisco	82.1

Briefly, the school child should be properly housed and taught those things which will be useful to him in after life. Everyone who has to do with children must be made to understand that the very best we can do for a child is to make him physically strong and teach him how to remain so.

Such instruction is now furnished most inadequately. I judge from a knowledge of the unfinished product the uneducated graduate, the most useful knowledge that the boy or girl who leaves school at the fourteenth year can possess, in addition to reading, writing, mathmatics, history and geography, is knowledge as to how to take care of and protect his or her own body. Who among you, not professional educators, to-day know anything of your early studies excepting reading, writing, arithmetic and geography? We all can read, some can write legibly, and we all are short in mathematics and geography.

We find in the curriculum of the elementary and high school, such studies as music, Greek, Spanish, History, Zoology, commercial law,

etc. Our only criticism against such studies, is that they are non-essentials, and crowd out other instruction which comprehend the essential. Such studies are time wasted on the great majority. For the girl who has to care for her several children and do her own house wok, as thousands have done and will do, modern languages, Spanish, history and zoology, play a very unimportant part. Her ignorance of physiology, hygiene, bacteriology and the elementary principles of living, plays a tremendous part in the well being of herself and her family, and in the mortality statistics of our own country. Boys from twelve to sixteen years of age are sent out to meet the world's problems without any knowledge of their nature or solution, with resulting disease and ill health as an invariable accompaniment of ignorance. Industrial education and health education are what these millions of boys and girls need most and of which they get the least.

All are now taught alike by the antiquated method as though all were in preparation for a literary or professional career. Sooner or later children will be taught in assorted classes. May it be soon!

Again, quoting Spencer, who wrote "that should we suddenly become an extinct race and should some future historian find the school books used by our children, he would think that he had discovered a race of celibates who were interested in everything but their own lives and happiness."

The most important subjects that may be taught a student of either sex from the twelfth to the fifteenth year, regardless of social station, are physiology, hygiene, bacteriology and food values.

Physiology—that the function of the various portions of the body be known. They should learn of the digestion, the circulatory and procreative systems. They should be taught the function of every organ in the body, so that abuse might be prevented.

Hygiene—Sufficient to cover the care of the body. They should know the necessity for bathing, the value of fresh air and exercise and how to utilize fresh air by proper breathing.

Bacteriology—Sufficient to appreciate that germs are germs and not fads of medical men, and that the causes of illness and death in the great majority of the human race are microbic in nature.

Physiology and bacteriology—if practically taught would make the cause and nature of disease readily comprehended by any child after the twelfth year, and would, in a few years, wipe from the face of the earth the various fads, cults, so-called sciences, spiritual healings and other manifestations of dense ignorance of the supposedly intelligent.

We can never teach people protection against infection and disease when they possess no realizing sense of the nature of infection or disease.

The New York public has just had its first great lesson in bacteriology—the tuberculosis exhibition at the Museum of Natural History. One of the most gratifying spectacles I have witnessed, was to see the hundreds of school children lined up waiting for admission—awaiting to get the first lesson in bacteriology.

The maintenance of health, the development of a vigorous resistance, which means the avoidance of disease, all of which depends largely upon a knowledge of food, of food values and the care and preparation of foods—this will never be learned in the home, because the home does not know. The child should be taught sufficient to realize that we do not eat simply to supply the appetite, but that he is to eat for the business purpose of supplying means for the growth and development of his body. An advanced step in this direction has been taken by Dean Russell, of the Teachers' College, who I believe is a pioneer in inaugurating systematic teaching along these lines. You may think that the public is wise about these things now, but it is not. Witness the prosperity of the boxed breakfast food business and the enormous consumption of candy, coffee and tea.

The curriculum should and does include instruction as to the nature and danger of stimulant drugs and narcotics. This is a legal requirement in most States. In the school, however, owing to the multitude of other studies which are considered more important, it is pushed aside and as a rule, little attention is paid to it.

Boys and girls of suitable age should be taught in ways deemed best by those skilled in teaching of the perils and dangers that await them. They should be educated in social prophylaxis. The statement that the medical man hears time and time again: "I did not

know that such things were"—means defective education in vital living principles.

Morrow, in the *Maryland Medical Journal*, of September, 1907, states that competent European observers agree that seventy-five per cent. of the adult population have, or have had gonorrhea, and that from ten to eighteen per cent contract syphillis. He believes it conservative to state that the morbidity from both these infections in this country would be present in sixty per cent. of the male population. Gynecologists tell us that from sixty to eighty per cent (different writers varying somewhat), of the acute inflammatory pelvic disorders in women are due to gonorrhea, innocently acquired, and that thirty-five per cent. of all operative pelvic conditions in women have the gonococcus as the etiological factor. Thirty per cent. of the cases of blindness are attributed to the gonococcus, the infection being acquired at birth. It is estimated that fifty per cent. of the cases of gonorrhea in men are contracted before the twentieth year, and in practically all instances the patient possesses little or no knowledge as to the gravity to himself or the far-reaching and terrible consequences to others.

It is not claimed that proper instruction along the above lines would remedy all the evils referred to, but for right living, a knowledge as to what constitutes it is required, and when the impress is made in the right way upon the impressionable mind of youth, much good will result.

They will never be told in the home, because the home does not know or is muzzled by lack of courage.

An absence of a thorough knowledge of the effects of alcohol, tobacco, tea and coffee on the human organism, in a boy or girl at the fourteenth year, means defective preparation for life. It is not for me to advocate that prohibition be taught in either alcohol, tobacco, tea or coffee. I do not believe in compulsion or in attempts at legislating righteousness into people. I do believe in education sufficient so that each individual may, with reason and intelligence, direct his life and habits; and this is what the youth of the land are not being instructed in at the present time. These substances are all in the same class when used habitually, only varying in the degree of damage made possible.

The child's education is incomplete without the knowledge that they are drugs and of their effect upon the organism. He will never be taught it in the home as he becomes an habitue in them through the association with his elders in the home.

The tea and coffee habit in the young is a custom fraught with great danger. The effects of these drugs, according to the United States Dispensatory, are as follows: "Tea is an astringent and gently excitant, and exerts a decided influence over the nervous system, evidenced by the feelings of comfort and exhiliration which it produces. Caffein, the coffee alkaloid and active principle, is a "valuable remedy as a cerebral and cardiac stimulant and as a diuretic," and is largely used in medicine.

Children in this country consume comparatively little alcohol. They consume enormous quantities of tea and coffee, however, and thousands are creatures of habit for these substances before they are twelve years of age—a habit detrimental to their health, preventing growth, physical and mental, as I have observed time and time again, and interfering later in no small way with their usefulness as citizens. It is well known that those accustomed to alcohol more readily become habitues of opium and its derivatives, and those who are accustomed to the use of both or either, the more readily become users of the deadly cocain. So the child habituated to coffee and tea, feels, as the youth merges into the adult, the requirement of a stronger stimulant, and the alcohol habit is a not infrequent outcome. At the out-patient department of the Babies' Hospital where I was active for eighteen years, it was rare, in getting the history of a patient, to find one over five years of age who did not have coffee or tea regularly, and sometimes both were the daily habit. Bottle-fed babies were often given tea in the bottles with the milk. Our records show that but twenty per cent. of those children over one year of age could be considered of normal development.

MacDonald, in his presidential address before the British Medico Psychological Association, states that he was convinced that the excessive use of tea was a cause of insanity among the working classes, and that the evils of tea-drinking among the working homes have to be reckoned with in any attempt to probe deeply the cause of insanity.

He, MacDonald, found in Great Britain, as many as fifteen per cent of non-educable children in village schools, and the percentage of dull and backward children ran as high as thirty-five per cent in some schools. These children suffering from "brain stunt," he attributes largely to the excessive use of tea, by both parents and children.

A child badly fed, poorly nourished and stimulated by tea and coffee with the resulting undeveloped body, is rarely an average student. His powers of perception, concentration and retention are all defective. A reasonably normal body is necessary for a good average mind. The infant's weight increases about twenty times before the adult period is reached, and its body is built by the food it assimilates. It requires no great process of reasoning to appreciate that the child which is fed on suitable food will become a more vigorous and better formed adult than one which is fed—beginning at birth and continuing during the entire development period—on food of indifferent tissue-building qualities.

The co-relation of a sound mind in a sound body is well demonstrated by Prof. Sargent, of Harvard University, in the *Popular Science Monthly,* of September. He refers to Porter, who examined 30,000 public school children in St. Louis, Mo., and found, among pupils of the same age, ranging from six to eighteen years, that the average height and weight of those in the higher grades were greater than those in the lower grades. In other words, he found that the pupils who were mentally the best equipped were physically the best developed.

Porter's conclusions have since been confirmed by Hastings in Omaha, Byer in Cambridge, Christopher in Chicago, Roberts in London, Burgerstein in Vienna and Lehrazig in St. Petersburg.

Sargent claims that this intimate relationship between body and mind is not limited to growing youths, but is true of all classes of individuals. He instances, the Fellows of the Royal Society of England and the English Professional Class, who may be said to represent the brain power of the British Empire which average, respectively, five feet, nine and three-fourth inches, and five feet, nine and one-fourth inches in height, and 160 pounds in weight; while lunatics, criminals, idiots, and imbeciles, who represent the other end of the intellectual scale, average in height from five feet, seven inches, to five feet, four and one-eighth inches, and range in weight from 123 to 146 pounds—a difference of 4.9 inches in average height and 37 pounds in average weight, between the highest and lowest class of English Society, as represented by the members of the Royal Society and idiots and imbeciles.

Compared with the general population, lunatics, according to Roberts, show a deficiency in statute of 1.96 inches, of weight 10.3 pounds, and criminals 2 inches and 17.8 pounds, indicating a deficiency of physical as well as mental development in both these unfortunate classes of society.

In observations on several hundreds of students at Harvard University, Sargent verified the conclusion of Porter, Christopher and others, in that the honor men were from one to two inches taller and weighed from four to eight pounds more than the average student. In conclusion, Sargent states that if there is any truth in statistics, achievements are to be attained by men as a class who have the best bodies, holding the best brains.

The immediate effects, as mentioned above, are determined by air space, lighting, heating, fire protection and fire escapes, seating and water supply and medical inspection.

(*Concluded in next issue*).

THE VALUE OF LOCAL MEDICAL SOCIETIES.

By V. V. ANDERSON, M. D., Lynchburg, Va.

Were physicians as alert to their own interests as are merchants, bankers, saloonists and post-carriers, the battle with patent medicines, prescribing druggists, jeweler opticians, free dispensaries, contract practice, rate cutting, etc., would be of short duration.

Doctors, as a class, display splendid humanitarianism. No other men see humanity as it really is; no other men have such confidence reposed in them of the health, reputation, happiness and life of mankind.

Placed as they are, on such a high pinnacle of confidence, trust and love, there is no other class of men that have the power to wield such influence. No class has a greater chance for doing good and elevating the race to a higher plane of living.

Individual effort may and does do good, but no great things were ever accomplished without concentration of forces. Isolation means diversity of interests, or what is more frequent, a total lack of interest. Working together shoulder to shoulder, having common purposes and ideals, creates congeniality, interest and enthusiasm. Many physicians will say, "Yes, I believe you are right about that. We ought to get together." But do they fully appreciate the great advantages and manifold possibilities of medical society membership? That the medical society can make the member a far better doctor, increase his income, and lighten his work, has certainly not occurred to the average physician. All these things and more can be done by an active, well-regulated society.

By papers and discussions, lectures, clinical meetings, establishment of reading rooms, a medical society can aid its members to improve themselves. To the laity, the society can be of great service. In the county or town in which it exists, it should be through its officers, the recognized authority on all matters of public sanitation and hygiene. As the public sees the wisdom of the society's recommendations, it will soon learn to refer to the authoritative mouthpiece of the local profession all the questions which arise, which have a medical and scientific aspect. If the society acts wisely, cautiously and fairly, its right to settle all of these questions will soon be recognized.

Such a condition is possible in any community where physicians are broad-minded enough to lay aside differences and work together. It is not a question of size and location, but of desire and earnest effort. It is hard to conceive how doctors, knowing the possibilities of fellowship for social, financial and professional improvement and ethical development attainable in a well conducted society, would be willing to deny themselves the benefits.

Probably a great incentive to the more perfect organization of our profession is found in the hope of furthering our material welfare. What men are more worthy of life on a generous scale with access to all cultural advantages? Who has a greater right to an old age full of honor, health and happiness, with freedom from financial strain and worries? And as a matter of fact, who work harder and receive less remuneration than doctors? From no other class does the community receive so much and give so little in return.

The life of the doctor is one of continual work, very little of which he gets paid for. Do we make supine admission of inability to change these conditions? Are we to continually pinch ourselves and families in order that we may "keep up appearances?" To this stupidity may be traced much of the overcrowding of our profession by raw material. By this means we encourage patients who could buy and sell us many times to be as slow as they like in settling their accounts. In order that our practice may seem large and that we may be thought prosperous, we answer calls day or night from dead-beats, who have never paid one cent of the doctor's bill. In order that our knowledge may not be questioned, we manage to disagree with the diagnosis and treatment of our brother physician and send many patients to osteopaths and other fakers. In short, our profession is near-sighted. We need glasses to overcome a very marked degree of astigmatism. If we are not receiving the good things in life that we deserve, it is no one's fault but our own. The blame should not be fastened upon the public or upon fakirs or upon patent medicines, newspaper advertisements, etc., but right where it belongs, and there the remedy should be applied.

The remedy is the local medical society. It can do more towards making our lot what it should be than any other agency. It can eliminate petty jealousies and dissensions. It can, if all will co-operate, secure for its members the proper remuneration for their services. The merchants have solved the problem of bad debts in their mercantile associations. The local society can stimulate to higher professional attainments and secure for us the public recognition of our worth that our culture and our labors demand. A little education of the people by the society will teach them that they no more want a doctor who does not attend his home post-graduate school than they want a public school teacher who does not attend the institute. They have compelled the last by legal enactment, and the doctor who desires to escape such compulsion a little later would do well to take due notice now and govern himself accordingly. Attendence should stamp a hall mark of professional approval and so become a passport to public favor and employment.

RE-NAMING OF MALARIA—ANOPHELESIS.

By E. W. ROBERTSON, M. D., Onancock, Va.

Fifty-one years ago Dr. Geo. B. Wood, in his *Practice of Medicine,* Vol. 1, p. 157, wrote thus of malaria:

"It has been observed that in certain regions of country where abundant vegetable decomposition accompanies an occasional flooding of the soil, and at the season when this decomposition is most ripe, a certain class of diseases is apt to prevail, entirely distinct from those which arise from irregularities, or changes in the sensible qualities of the atmosphere. This result has been usually ascribed to aeriform exhalations, which have received the name of "Marsh Miasmata," or "Malaria," the former intended to express their origin and nature; the latter, simply the fact that they render the air unwholesome.

"The circumstances which appears to be essential to the production of miasmata are heat, moisture, and vegetable decomposition."

Dungleson's *Medical Dictionary* says, under the head of Miasma:

"To these terrestrial emanations—the Koino-miasmata of Dr. E. Miller of New York—the Italians give the name "aria cattiva" but more commonly malaria ('bad' air'), a word which has been adopted into other languages. Of the miasms which arise either from the animal body or from the most unhealthy situations, we know, chemically, nothing. All that we do know is that, under such circumstances, emanations take place, capable of causing disease, in many of those who are exposed to their action."

Dr. Austin Flint, 1866 *Prac. Med.,* p. 740-741, says, in reference to intermittent and remittent fever: "The causation involves a specific morbific agent, commonly known as malaria. The existence of a special cause is logically inferred from the peculiar character of the disease, its limitation to certain localities called malarious, and the fact that it is controlled by remedies having a specific operation. The morbific agent has not been demonstrated; its nature and the mode of its production are unknown. It was attributed to vegetable decomposition in marshy localities and called "marsh miasma" in 1717, by Lancisci, an Italian writer. This doctrine, and the name, have since been very generally adopted. But that something more than ordinary vegetable decomposition is requisite for its production is sufficiently proved by the disease being indigenous in certain localities, whereas, in certain districts and countries in which vegetable decomposition must take place abundantly, the disease never occurs."

Roberts Bartholow's *Pract. Med.,* 1884, p. 830 (Malarial Diseases) says: "Causes—The great etiological factor is malaria. The telluric and other conditions favorable to the development of malaria exist largely in this country, along the Atlantic seaboard as far as Boston. The presence in the atmosphere of a morbific principle which is developed when certain atmospheric and telluric influences exist, is now almost universally admitted. Although the existence of such a principle is admitted, the attempts to isolate and define it have proven abortive unless the recent discovery of Klebs and Tommasi-Cruddi supply the missing form. The 'Bacillus Malaria' which they have discovered floating in the atmosphere of the Pontine Marshes, produces paroxysms of intermittent fever in the animals subjected to its action by inoculation. If this discovery is confirmed, and these rod-like bodies are proved to be the cause of those phenomena which we call malarial fever, it will prove to be the first and most important step toward permanent eradication of the disease. Malaria is also called 'marsh miasm' because of the abundance of the poison about marshes. But not all marshes produce malaria. The Dismal Swamp, for example, is free from marsh-miasm, although apparently well adapted to produce it. Its exemption is supposed to be due to the growth of the cypress tree."

Osler's *Practice Medicine* (1901, 3d ed.), p. 207., says: "The mosquito and malaria.—Since the first printing of this edition the observations of Ross, of the Indian Medical Service, have shown that the malarial organism undergoes development in the body of the mosquito."

"Meantime, awaiting further knowledge, advantage may be taken of the constant presence of the parasite in malaria. This alone, without reference to the true nature of the organism, is a fact of the highest importance. To be able, everywhere and under all circumstances, to differentiate between malaria and other

forms of fever is one of the most important advances which has been made of late years in practical medicine."

Osler's *Pract. Med.* (6th edition- p. 11, says: "In 1880 Laveran, a French army surgeon, stationed at Algiers, noted in the blood of patients with malarial fever pigmented bodies, which he regarded as parasites, and as the cause of the disease. Richard, another French army surgeon, confirmed these observations. In 1885 Marchiafava and Celli described the parasites with great accuracy, and in the same year Golgi made the all important observation that the paroxysm of fever invariably coincided with the sporulation or segmentation of a group of the parasites. In the following year (1886) Laveran's observations were brought before the profession of the United States by Sternberg.

"The next important step related to the question of the mode of infection. It had been suggested by King, of Washington, and others that the disease was transmitted by mosquitoes. The important role played by insects as an intermediate host has been shown in the case of the Texas cattle fever, in which Theobald Smith demonstrated that the hematozoa developed in, and the disease was transmitted by ticks; but it remained for Manson to formulate in a clear and scientific way the theory of infection in malaria by the mosquito. Impressed with the truth of this, Ross studied the problem in India, and showed that the parasites developed in the bodies of the mosquitoes demonstrating conclusively that the infection in birds was transmitted by the mosquito. W. A. MacCallum suggested that the flagellæ were sexual elements, and observed the process of fertilization by them. Studies by Grassi, Bastianelli and Bignami and many others, confirmed the observations of Ross and demonstrated the fact that the malarial parasite of human beings develop only in mosquitoes of the genus anopheles.

"Then came the practical demonstration by Italian observers, and by the interesting experiments of Manson, Jr., of the direct transmission of the disease to man by the bite of infected mosquitoes. And lastly, as a practical conclusion of the whole matter, the results of the antimalarial campaign in Italy and the remarkable experiments of Koch and his assistants have shown that by protecting the individual from the bite of mosquitoes, by exterminating the insect, or by carefully treating all patients so that no opportunity may be offered for the parasite to enter the mosquito, malaria may be eradicated from any locality.

"In the present state of our knowledge it would appear that all species of the genus anopheles may act as hosts of the parasite. The more common genus of mosquito in temperate climates are culex and anopheles. The different species of culex form the great majority of our ordinary house mosquitoes, and are apparently incapable of acting as hosts of the malarial parasite. All malarial regions, however, which have been investigated contain anophelese. Although this is apparently a positive rule, anopheles may, however, be present without the existence of malaria under two circumstances: first, when the climate is too cold for the development of the malarial parasite; and, secondly, in a region which has not yet been infected. So far as is known, the parasite exists only in the mosquito and man.

It is apparently fair to state that regions in which mosquitoes of genus anopheles are present, may become malarious during the warm season.

"Evolution in the Body of the Mosquito." When a mosquito of the genus anopheles bites an individual whose blood contains sex-ripe forms (gameto-cytes) of the malarial parasite, flagellation and fecundation of the female element occurs within the stomach of the insect. The fecundated element then penetrates the wall of the mosquito's stomach and begins a definite cycle of development in the muscular coat. Two days after biting there begin to appear small, round refractive, granular bodies in the stomach wall of the mosquito, which contain pigment granules clearly identical with those previously contained in the malarial parasite. These develop until at the end of seven days they have reached a diameter of from 60 to 70 m. At this period they may be observed to show a delicate radial striation, due to the presence of great numbers of small sporoblasts. The mother oocyst (zygote) then bursts, setting free into the body cavity of the mosquito an enormous number of delicate spindle-shaped sporozoids. These accumulate in the cells of the veneno-salivary glands of the mosquito and, escaping into the ducts, are inoculated

with subsequent bites of the insect. These little spindle-shaped sporozoids develop, after inoculation into the warm-blooded host, into fresh, young parasites. The sporozoid, which has developed in the oocyst in the stomach wall of the mosquito is then the equivalent of the spore, resulting from the asexual segmentation of the full-grown parasite in the circulation. Either one, on entering a red blood-corpuscle, may give rise to the asexual or sexual cycle. As a rule, the first several generations of parasites in the human body pursue the asexual cycle, the sexual forms developing later.

These sexual forms, sterile while in the human host, serve as the means of preserving the life of the parasite and spreading infection, when the individual is subjected to bites of anopheles."

The Virginia Bulletin, for July, 1909, says:

"If a certain form of mosquito, known as the Anopheles, bites a person suffering with malaria, the mosquito will draw up with the blood of that person the germs of the malaria. These germs remain in the body of the mosquito and undergo a change of form during the course of a few days. If the mosquito then bites a second person who does not have the disease, he will inject into that person the germs of the malaria contracted from the first person. In this way, and in this way only, is malaria spread from one person to another."

As for the treatment of the malady, from the days of the Countess of Cinchon, to the present, cinchona (or its alkaloids) has been the remedy. While at first, and, for a long time, used empyrically, since the Brinz-Laveran theory, being shown a bactericide, it is now used rationally, and its importance intensified in the minds of the profession, both as a preventive as well as a curative. Our late lamented Nicholas Senn, I believe, by his notes on South American travels, under head of Preventive Medicine, impressed this upon my mind. It is being supplemented by the screening of patient or mosquito, and killing or exterminating latter, in sections.

Now, as to the re-naming:—It seems a little strange that since the dawning of the newer light upon the subject of "Malaria," the zeal for the truth being great, no one, to my knowledge, has ventured a new name in keeping with its real nature. Case of "Yellow" fever —that name is suggestive enough, after its mosquito theory, as before; but not so with the term "Malaria." It is misleading. I fail to see the significance of the term "Mal-aria" in reference to the disease in point—no miasm or other bad-air. It is a blood disease, inoculated only through the bite of a certain form of mosquito. The term is a misnomer, a nom de plume. The Anopheles is the sine qua non of that disease called "Malaria." He digests the parasite or "develops" it in his body. It becomes his property—a part of his body; it is a harmless germ to him, becoming physiological like the viper's venom in his own body, but it becomes pathological to mankind, after being bitten by him—from the helpless babe in cottage, or hovel, to the monarch on the throne, with almost a mathematical precision, when a train of fever and blood havoc supervenes.

Why not accept the term of "Anophelesis"?

Proceedings of Societies, Etc.

AMERICAN PROCTOLOGIC SOCIETY.

(Continued from last issue).

"Vaginal Anus in the Adult, with Report of Two Cases."

By LOUIS J. HIRSCHMAN, M. D., Detroit, Mich.

Dr. Hirschman reported two cases of imperforate anus with the anomalous opening occurring in the lower part of the vagina, both occurring in adults. He successfully operated in both cases, restoring the anal outlet to its normal position with a good functional result in both cases. His first case was aged 25, unmarried, and until a few months before examination did not know that she was anatomically different from other young women. She was brought up by a maiden aunt who, while realizing that her discharge was not normal, felt that as long as she was having regular bowel movements, she would put off any operative interference until later in life.

The operation in this case consisted in closing the vaginal anal orifice after dissecting the rectum free from the viginal septum. There being present an infantile sphincter muscle at the normal anal site, an incision was made through the center of this, and by blunt dissec-

tion the tissues between it and the blind end of the rectum were separated. The rectum was then pulled down, opened and sutured to the integument. The perineum was not split open nor was the sphincter divided. A good functional result followed.

His second case was also unmarried, 23 years of age. The case was very similar to Case I, except that there was an over-development of the sphincter vaginæ which gave her good fecal control. There was present in this case a small fistula connecting the anus and vulva but not communicating with the rectum. In this case the perineum was split and the fistula dissected out. The vaginal anus was dissected free and brought down to the normal anal site in a manner similar to that pursued in Case I. The perineum was then repaired as in an ordinary perineorrhaphy. The functional result in this case was also good. The author concludes from his experience with these two cases, and realizing the very high mortality from operations for imperforate anus, in infants, that where there is some abnormal outlet for the feces present, it is far better to allow patients to go on in their abnormal condition until they grow old and strong enough for surgical interference and the correction of nature's failure.

"Tubercular Fistula with Extensive Infiltration with Specimen Exhibted."

By SAMUEL T. EARLE, M. D., Baltimore, Md.

A case was reported of tubercular ischio-rectal fistula, the skin surface of which resembled an acute inflammatory condition ready to break down, yet, when opened, it proved to be a dense mass of fibrous tissue with only a few tracts of necrotic tissue running through it.

The patient was a policeman, age forty-five; robust and of a ruddy color, weighing 180 pounds; no cough, no history of pulmonary trouble. Patient admitted to hospital, December 29, 1906.

The left buttock was very much swollen and inflamed; there were several fistulous openings on its surface, which could not be followed far beneath the skin, and there was one of them that opened just to the right of the anterior commissure, into the anal canal. Upon laying open the buttock between two of the openings, there was exposed a mass of white fibrous tissue that seemed to be encapsulated, except at points which apparently were necrotic,—which was adherent to the subcutaneous tissue. Supposing it to be a tumor, which had broken down in places, an incision was made, on either side near each lateral border, for the purpose of removing it, which was done. The mass measured 6x3x2 inches.

It ran down to and some went between the muscles of the buttock, and in one or two instances involved the same. The tract from the inner margin of the mass, to the opening in the anal canal, was then laid open and packed with gauze. The cavity left was so large that sutures were introduced to draw the edges partially together, and to hold in the packing. These were supplemented by adhesive strips.

After the mass was removed, it was found to be composed principally of fat, with here and there a sinus which was surrounded by dense fibrous tissue from one-quarter to one-half inch thick, and there were found several large larvæ, supposedly of flies, deep down in the sinuses of the growth. The tapering, tail-like process, that extended over the trochanter major, was composed principally of muscle.

Upon microscopical examination, the growth proved to be tubercular. The patient made a slow but complete recovery. The large cavity filled in completely. The patient is now perfectly well and robust.

"Fistula in the Posterior Anal Commissure."

By J. COLES BRICK, M. D., Philadelphia, Pa.

This author stated that the anatomy of the posterior anal commissure is of such peculiar arrangement that ulcers or fistulæ in this region frequently do not granulate in a proper manner.

The greater part of the external sphincter muscle arises from the coccyx, and after forming the ano-coccygeal body of Symington, passes around the anus, forming a Y-shaped or triangular cul-de-sac at the posterior anal commissure, making this the weakest part of the anal circumference. The levator ani muscle is separated from the coccygeus muscle by a cellular interspace, rendering possible an easy extension of pyogenic organisms.

In ulcerations or small fistulæ in the posterior anal commissure, it is the writer's custom to make a triangular incision with the apex toward the anus, rather than an antero-posterior cut. In cases of fissure in this commissure, two incisions, 1-8th of an inch deep are

made down into the sphincter muscle on each side of the fissure, all fibrous tissue being removed from the fissure itself.

The physiological action is, that during defecation, the lateral fibers of the sphincter forming the triangular space are at rest, due to their division; thus saving distension of this space, and consequently no interference with healing.

"Modified Technique in Resection of the Rectum."

By J. RAWSON PENNINGTON, M. D., Chicago, Ill.

Numerous illustrations were shown by the author, intended to serve as demonstrations designed and employed by himself and Dr. Gronnerud in resection of the rectum in a special case. The growth for which the method was employed extended upward from the upward border of the levator ani muscle for about two and one-half inches.

A perineoraphy was first done, splitting the recto-vaginal septum back to Douglas cul de sac. The rectum was then dissected from its lateral and posterior connections upward until it could be pulled downward far enough to effect an end-to-end anastomosis, when the section, including the growth was removel.

The incision was closed with buried catgut-sutures, and silkworm-gut for the skin. The posterior vaginal flap covering up, as it did, the operating field, prevents the urine, vaginal and uterine secretions, from coming in contact with the wound.

"Abdominal Massage in the Treatment of Chronic Constipation, etc."

By T. L. HAZZARD, M. D., B. S., Pittsburgh, Pa.

The writer referred to the fact that general massage had been practiced from very ancient times until the present for the relief of fatigue and for the purpose of increasing the flow of fluids in the blood-vessels, the lymph spaces and juice canals, by which more perfect elimination of waste is obtained and better assimilation brought about. Two conditions, in his opinion, the relief of which will do away with two-thirds of the slight ailments as well as of some of the more serious ones. He began massage for the relief of chronic constipation and was much suprised to find the far-reaching, adventitious effects produced. Among others, for example, was that the chalky deposit in the joints in articular rheumatism, under careful, patient, persistent manual therapeutics as applied to the bowels, will entirely disappear more often than not.

Mentioned no particular method, saying that any good text-book would give the technic sufficiently well. This manipulation is recommended not only for chronic constipation, but also for the relief of coprostasis for which operation it is very frequently done.

After indicating more of the benefits and some of the dangers of the method, the writer said that if this treatment called for more time than the physician or surgeon could spare, it had better be left off altogether, although the patient would surely lose a very great benefit. The paper closed with the remark that doubters as to the very great advantages which will accrue to the sick, in many, many ailments, have but to practice careful and intelligent massage to be convinced.

"Intestinal Auto-Intoxication—Its Treatment by Irrigation."

By WM. L. DICKINSON, M. D., Saginaw, Mich.

During normal digestion, there are present in the intestine peptones, crystalline bodies, aromatic substances and ptomaines, which are toxic, but changed into less toxic bodies and eliminated by the stools. Whenever their number is very great, relief is obtained by a profuse intercurrent diarrhea, while the remaining toxic bodies, having been acted upon partially by the digestive mucosa, are changed in the liver, then enter the circulation, and being further changed by the antitoxic glands, finally are eliminated through the skin, kidneys and lungs.

Many patients have suffered for years, and perhaps the greater part of their lives from constipation, and the condition has been aggravated as they have grown older and more sedentary in their habits.

There are well-marked symptoms in the auto-intoxicated. Among the prominent are: a drawn expression; sunken eyes; freqeently the so-called liver spots; often the patient is pot-bellied and the skin is dry and harsh; it is quite common to have the bowels greatly distended by gases, shortly after meals, necessitating the loosening of the clothing; the breath is frequently very offensive; the odor of the stools is sickening, while the stools are constipated, hard, lumpy, and of small caliber or

semi-liquid and mushy, and upon examination mucus and membranes are found. Patients are often unable to concentrate their thoughts, and there is loss of memory. There is great fatigue, and depression of spirits. Pruritus, urticaria, eczema or furunculosis caused by intestinal auto-intoxication may be present.

These are not all the symptoms that may arise from intestinal auto-intoxication but they are sufficient to emphasize the importance of the subject, and the necessity of having the intestinal discharges examined by a competent person before and during the treatment of the patient. An examination of the urine to determine the amount of indican present in cases of intestinal auto-intoxication can be made by any physician, but there are times when a laboratory examination must be made by an expert.

The treatment must of necessity begin with careful attention to the kind and amount of food taken. Vegetables should largely replace meats, and in fact the patient will gain faster if meat is not partaken of at all. There should be a liberal use of water internally,—drinking between meals two to three quarts of water daily.

The treatment is not simple and is one that requires attention and generally a long time. The routine method is the administration of calomel gr. 1-10 and podophyllin gr. 1-24, repeated every hour for eight or ten doses, followed with Rochelle salt one-half ounce in six ounces of hot water every two hours until the stools are watery. The colon should be distended with warm water containing half an ounce of soda sulphate to the quart. The patient should be in the knee-chest position. The water should flow slowly, fully distending the bowels, but not causing pain. This washing out of the bowel should be done daily for about one week and the urine should be examined again for indican, and if it is found present, the indication is that there is need of another course of the calomel and podophyllin. The bowel should be made aseptic by the use of sulphocarbolate of zinc gr. x to one quart of water used by enemata retaining as much of it as possible.

The treatment is to keep the intestine as clean as possible.

"Perirectal Abscess."

By J. A. MACMILLAN, M. D., Detroit, Mich.

Attention was called to the fact that in a large proportion of cases of perirectal abscesses the bacillus tuberculosis is present, and that next in importance, as an etiologic factor, is the genococcus. A diagnosis is most difficult when the abscess is located above the levator ani. In this location it is frequently found to be complicated with some disease of one or more of the pelvic organs. In this condition it is sometimes necessary to make an abdominal incision both for exploratory purposes and to rectify the condition. In the treatment of the perirectal abscess, however, the drainage should always be from below.

"Disease of the Colon Due to Extra-Intestinal Causes, with Special Reference to Membranous Colitis:—Illustrative Cases."

By A. B. COOKE, M. D., Nashville, Tenn.

The intimate functional relations existing between the several viscera of digestion, which are recognized by all, were pointed out, but the writer stated that the anatomic relations of the alimentary tube and the frequency with which they are to be looked to for the explanation of many of its pathologic conditions, have not received the serious consideration their importance demands. He also called special attention to certain familiar diseases of the colon, which are often found to exist primarily because of these relations, and the mechanical irritation growing out of them.

Perhaps, the most conspicuous of which, was cited *membranous colitis*. The writer recalled the great divergence of opinion that has always prevailed as to the true nature and pathology of this malady, and notwithstanding the conclusions of such authorities as Osler, Tyson, Hemmeter and others, that the disease is a secretion neurosis; he takes the contrary view held by many other equally careful and competent clinicians, who hold that there are always pathological lesions that bear directly upon the colon, either from without, as by pressure from other misplaced organs, or by adhesions, or by some local irritant from within to account for these cases.

For present purposes the term membranous colitis is limited to that peculiar affection, which is characterized by the periodic discharge of mucus with membranes or casts from the

bowel, and of which fecal stasis is always a prominent feature. With reference to this type of colitis, Dr. Cooke stated unequivocally that he had never seen a case in which he failed to find some gross pathologic condition of one or more abdominal organs as well as of the mucous membrane, and furthermore, that the etiologic relation between the two has been clearly established in a number of cases by the prompt and permanent disappearance of the bowel trouble upon correction of the extra-intestinal condition, after all other methoods of treatment had failed. From this experience he had been led to conclude that the primary causes of this particular variety of colitis belong in the main, if not exclusively, to a special class, viz., those which act mechanically. Most noteworthy in the list of such causes are enteroptosis, right movable kidney, peritoneal adhesions and extra-intestinal growths which occasion continuous pressure upon some portion of the colon.

He then discussed each of these causes in detail and supported his argument by the enumeration of well-illustrated cases.

(*Continued in next issue*).

The Medical Examining Board of Virginia

Met at Murphy's Hotel, 9 P. M., June 22, 1909. Dr. R. W. Martin, President, presiding; Dr. R. S. Martin, Secretary and Treasurer, recording. On roll call the following other members were present: Drs. R. M. Slaughter, Theological Seminary; A. S. Priddy, Keyesville; H. U. Stephenson, Toano; W. B. Robinson, Tappahannock; W. W. Wilkinson, Lacrosse; M. R. Allen, Norfolk; Herbert Old, Norfolk; E. T. Brady, Abingdon.

The minutes of the last meeting were read and adopted.

The following resolution offered by Dr. Old was adopted: *Resolved,* That the reciprocity fee is for a certificate from the Secretary of The State Board of Medical Examiners stating when the applicant passed the board, and that said certificate does not guarantee an acceptance from any other Board, and that the fee is not returnable.

Dr. Stephenson introduced the following resolution which was adopted: *Resolved,* That a Committee of three be appointed to consider the question of identity of applicants, and report to this Board at its meeting Wednesday, June 23, 1909.

The President appointed Drs. Old, Allen and Priddy such committee.

The order of examinations was as follows:

Wednesday—From 9 A. M. to 12 M., Obstetrics, Gynecology and Pediatrics.

From 12 M. to 3 P. M., Practice, Etiology and Diagnosis.

From 4 P. M. to 7 P. M., Pathology, Bacteriology, and Neurology.

Thursday—From 9 A. M. to 12 M., Anatomy and Embryology.

From 12 M. to 3 P. M., Laryngology, Rhinology, Ophthalmology and Otology.

From 4 P. M. to 7 P. M., Materia Medica and Therapeutics.

Friday—From 9 A. M. to 12 M., Histology, Physiology and Hygiene.

From 12 M. to 3 P. M., Surgery.

From 4 P. M. to 7 P. M., Chemistry, Toxicology and Medical Jurisprudence.

The President then appointed Committees:

Reciprocity Committee—Drs. Slaughter, Priddy and Old.

Oral Committee—Drs. Old, Slaughter and Brady.

It was ordered that the Board meet in Lynchburg, Va., Dec. 14, 15, 16, 17, 1909.

Board adjourned.

The Board met at Murphy's Hotel, 9 A. M., June 23, 1909. President Dr. R. W. Martin; Secretary and Treasurer Dr. R. S. Martin; Drs. Allen, Old, Slaughter, Brady, Priddy, Lile and Robinson were present.

The different Medical Schools of the State had the following representatives present: Drs. Hugh M. Taylor and Paulus A. Irving representing the University College of Medicine; Dr. Miller representing the Medical College of Virginia; and Dr. Richard Whitehead representing the University of Virginia. The President stated the object of the meeting to be a conference between the Board and the Medical Colleges as to the changes most desirable in the Medical Laws of the State. After some discussion a motion that a committee of three from the Board meet a like committee from the Medical Colleges of the State at the next meeting of the Medical Society of Virginia to be held in Roanoke this fall, to consider what changes are necessary in the Medical Laws, and report at the December meeting of the Board. The President appointed Drs. Old, Brady and Priddy as Committee.

Your Committee on Identification of Applicants recommends that, for identification of applicants for examination, a recent unmounted photograph of each and every applicant, not personally known to any member of the Board, be required, together with his or her autograph, verified and attested by the Dean of the College of graduation, or by the Mayor, Clerk or Judge of the County or City in which the applicant resides. This photograph with the necessary endorsements must be presented to the secretary on registration. Board adjourned.

The Board met at Murphy's Hotel, June 24, 8 P. M., 1909, Dr. E. T. Brady, Vice-President, presiding; Dr. R. S. Martin, Secretary and Treasurer; also Drs. Lile, Slaughter, James, and Robinson were present. Dr. James' resolution in regard to grading of non-graduates was adopted, which is as follows: *Resolved,* That the examination papers of a candidate who takes the partial examination shall be graded and marked as Passed or Failed to pass according as he makes 75 per cent, or less on such subjects as he may have been examined on before graduation. On the final subjects on which he shall be examined after graduation he shall be required to make an average of 75 per cent.

Board adjourned.

R. W. Martin, Pres.
R. S. Martin, Sec.-Treas.

QUESTIONS FOR EXAMINATION OF APPLICANTS FOR CERTIFICATES OF LICENSE TO PRACTICE IN VIRGINIA, JUNE, 1909.

Section on Pathology, Bacteriology and Neurology.

R. M. Slaughter, M. D., Theological Seminary, Va., Examiner.

Pathology.

1. Name the varieties of degeneration. Name the form of degeneration that tubercle undergoes in chronic cases of tuberculosis.
2. What is infection? How do bacteria gain entrance into the body? What is suppuration?
3. Give the etiology and pathology of acute endocarditis. What are its results if patient survives the acute attack?
4. What is endarteritis (endoarteritis)? What is endarteritis obliterans and what are its ultimate results to the tissues supplied?
5. What is granulation tissue, and under what conditions is it formed.
6. Name the blood changes in leukemia. What is the condition of the spleen and lymphatic glands in this disease?

Bacteriology.

1. Explain the terms, obligate aerobe and facultative anaerobe. Define the terms germicide, disinfectant, antiseptic and aseptic.
2. Describe (tell all you know about) the tubercle bacillus.
3. Name a motile, pathogenic micro-organism. To what is the power of motion in certain bacteria due? Classify the most common pyogenic micro-organism. Name a pathogenic diplococcus.

Neurology.

1. Define the terms, neurasthenia, psychasthenia, tic and tonic and clonic as applied to the character of spasms.
2. Give the symptomatology of acute anterior poliomyelitis (infantile paralysis).
3. Give the diagnosis and treatment of locomotor ataxia (tabes dorsalis).

Section on Materia Medica.

Dr. W. B. Robinson, Tappahannock, Va., Examiner.

1. Name the preparations of Manganese. Give dose and physiological action of each preparation.
2. Describe the physiological effects of Emetine.
3. Compare the effects of Hyoscyamus, Belladonna and Stramonium.
4. Describe the toxic action of and give the antidotes to the salts of Mercury.
5. What is Ergot? What is its effect upon the parturient uterus? Give dose of the fluid extract.
6. Name the principal alkaloids of Opium. Compare their effects and give the antagonists to Opium poisoning.

Therapeutics.

W. W. Wilkinson, M. D., LaCrosse, Va., Examiner.

1. What are the therapeutic uses of the Silver preparations?
2. What are the indications for the use of Strophanthus; of Sparteine Sulphate?
3. Give the methods of administering Turpentine, the indications for its use, and the caution to be observed in its application.
4. Give therapeutic uses of Salicylic Acid.
5. Give the drugs applicable in the treatment of influenza and state how they should be used.
6. Give the general therapy of the preparations of Ammonia.

Section on Surgery.

Committee—Drs. Samuel Lile, Lynchburg, Chairman; E. T. Brady, Abingdon; R. M. Slaughter, Theological Seminary.

1. What is meant by Physiological and Pathological Hypertrophy? Physiological and Pathological Atrophy?
2. What is meant by infection? Mention chief sources of infection.
3. Mention the chief complication of gonorrhoea.
4. Define Asepsis, Antisepsis, Disinfectant, Sterile, Deoderant.

5. Differentiate fracture near a joint from a dislocation.
6. What is Potts 'fracture, and how should it be dressed?
7. After a clean abdominal section, what would lead you to suspect infection?
8. Give diagnosis of Empyema and treatment for same.

Section on Anatomy and Embryology.

Dr. H. U. Stephenson, Toano, Va., Examiner.

1. Describe briefly the nasal cavity and the bones which enter into its formation.
2. Describe the sacrum and tell what passes through the openings in it.
3. What membranes (a) envelop the brain? (b) What processes are formed by the outer one?
4. Name the bones which form the foot and give the articulation of each.
5. Give the course and relations of the ureter in the female pelvis.
6. What nerves supply the tongue?
7. Name the muscles attached to the scapula.
8. Describe the abdominal aorta. Name its branches and give their general distribution.
9. Give boundaries and contents of Scarpa's triangle.
10. Give the course and relations of the colon.

Section on Practice, Etiology and Diagnosis.

Drs. E. T. Brady, R. B. James, H. U. Stephenson, Examiners.

1. What is parotitis? Give symptoms. State most usual complications and how managed.
2. Give cause and treatment of myxedema.
3. Give symptoms, appearance and treatment of Herpes Zoster.
4. Give physical and clinical symptoms of chronic cardiac dilatation.
5. What inferences should be drawn from persistent scanty urination?
6. What are the two varieties of Jaundice, and to what is each due?
7. How would you distinguish between ascites and other abdominal enlargements?
8. Give symptoms, dangers and management of arterio-sclerosis.
9. What are the earliest noticeable indications of tubercular invasion?
10. In what condition is gastric lavage indicated, and when contra-indicated?
11. Differentiate between tetanus and tetany.
12. In what condition do we find (a) temporary, and (b) persistent, enlargement of the lymphatic glands?

Section on Obstetrics, Gynecology and Pediatrics.

Dr. Herbert Old, Norfolk, Va., Examiner.

1. (a). How many cases of labor have you delivered? (b). How many have you seen delivered? (c). Describe the delivery of the most difficult case you have seen.
2. Inevitable abortion at the fourth month of of pregnancy: (a) Diagnosis; (b) Management in detail.
3. Define the following: (a) Hydatidiform mole; (b) Placenta Succenturiata; (c) Caput Succedaneum; (d) Vernix Caseosa; (e) Melena.
4. Management of the third stage of labor.
5. Active treatment of (a) Sapremia; (b) Septic Endometritis.
6. Necessity for and the technique of repairing second degree lacerations of the perineum following labor.
7. Cancer of breast; (a) Early diagnosis; (b) Indications for operation.
8. Radical operation for the cure of cancer of breast; (a) Technique; (b) What constitutes permanent cure?
9. Pertussis; (a) Diagnosis; (b) Complications; (c) Prognosis; (d) Prophylaxis.
10. Acute rheumatic infection in children; (a) Manifestations; (b) Treatment.

Section on Physiology, Hygiene and Histology.

M. R. Allen, M. D., Examiner.

Physiology.

1. Describe the digestive processes which take place in the mouth and stomach.
2. What changes take place in the blood in its passage through the lungs? What is tidal air, and residual air?
3. Which portion of the glandular structure of the kidney excretes the salts, and which the watery constituent of the urine? Describe normal urine.
4. What nerves form the solar plexus, and what organs (viscera) does it supply?
5. Give the origin, function and distribution of the seventh cranial nerve.
6. Name the varieties and respective functions of the glands of the skin. Where is the breathing center located?

Hygiene.

1. Name the dangers attendant upon the use of spring and well water for drinking purposes. What precautions should be taken to protect the water from these sources?
2. Describe the hygienic treatment of pulmonary tuberculosis.
3. Name the diseases of animals that are communicable to man. Name the chief impurities of the air in large cities.

Histology.

1. Give the histological structure of a nerve.
2. Give the histological structure of Peyer's patches and that of an artery.

Section on Chemistry, Toxicology and Medical Jurisprudence.

Dr. R. B. James, Danville, Examiner.

Chemistry.

1. Describe Iodine. From what source is it chiefly obtained? What are its uses? Give a simple test for Iodine.
2. What elements are known as the Alkali-metals? Give some of their common properties.
3. Give formulæ of three officinal Potassium salts, indicating the uses of each.

4. To what does Potassium-permanganate owe its disinfectant properties? Explain this reaction.
5. Give the formulæ of Mercurous Chloride and Mercuric Chloride. Describe the difference between them as regard their physical appearance and medicinal properties and uses.
6. Give formula of Chloral Hydrate. How is it prepared? Give uses.

Toxicology.

1. Give symptoms and treatment of Acute Arsenical poisoning.
2. Give symptoms and treatment of Chronic Arsenical poisoning.
3. What is Trichiniasis? How produced and how may it be recognized?

Medical Jurisprudence.

1. Give medico-legal definition of wound.
2. Describe following kinds of wounds. Incised; Punctured; Lacerated; Contused.
3. What is Coma? Mention three causes of Coma.

Section on Laryngology, Rhinology, Ophthalmology, and Otology.

Drs. A. S. Priddy, Keysville, Chairman; E. C. Williams, Hot Springs; and Herbert Old, Norfolk, Examiners.

Laryngology.

1. What symptoms would cause you to suspect Adenoids in children?
2. Define Aphonia, and give its common causes.
3. What is the essential cause of Diphtheria? What of Pseudo-membranous or True Croup? Give the most important points in differential diagnosis between Follicular Tonsillitis and Diphtheria.

Rhinology.

1. State four local and four general causes of Epistaxis.
2. What structures are involved in Hypertrophic Catarrh? Give symptoms and treatment. Give symptoms and treatment of Chronic Atrophic Catarrh; what is it usually called, and why so called?

Ophthalmology.

1. Define Ptosis; Strabismus; Diplopia; Myopia; Hypermetropia; Presbyopia; Chalazion.
2. State etiology, symptoms and treatment of Acute Conjunctivitis; also, its common name when it becomes contagious.
3. Give etiology, symptoms and treatment, both preventive and remedial, of Ophthalmia Neonatorum.

Otology.

1. Give three methods of removing foreign bodies or impacted wax from the ear.
2. Give etiology, symptoms and treatment of Acute Mastoiditis; name three of its common and serious results.

Alphabetically Arranged List of Applicants for License to Practice Medicine, Surgery, Etc., Who Passed Satisfactory Examinations Before the Medical Examining Board of Virginia During Its Session, June 22-25, 1909, held in Richmond, Virginia.

Adler, Henry I., Newport News, Va., Maryland Medical College, 1904.
Bowles, H. H., Richmond, Va., University College of Medicine, 1909.
Baerecke, G. H., Richmond, Va., University College of Medicine, 1909.
Bird, Charles W., Metomkin, Va., University College of Medicine, 1909.
Boice, E. S., Richmond, Va., University of Pennsylvania, 1909.
Bansk, F. L., Madison, Va., Medical College of Virginia, 1909.
Bray, S. E., West Point, Va., Medical College of Virginia, 1909.
Brent, M. S., Heathsville, Va., Medical College of Virginia, 1908.
Barnes, John B., Portsmouth, Va., Leonard Medical College, 1909.
Boldridge, J. R., Richmond, Va., Medical College of Virginia, 1909.
Baker, John A., Portsmouth, Va., Leonard Medical College, 1909.
Burnham, M. P., Harrisonburg, Va., Howard University, 1909.
Bardin, J. C., Charlottesville, Va., University of Virginia, 1909.
Bevins, O. E., Wood, Va., Maryland Medical College, 1909.
Blaine, R. G., Purcellville, Va., Georgetown University, 1909.
Collier, H. L., Richmond, Va., University College of Medicine, 1909.
Caruthers, V. O., Alden, Va., Medical College of Virginia, 1909.
Clark, M. F., Hanover Court House, Va., Medical College of Virginia, 1909.
Cox, V. M., Independence, Va., University of Nashville, 1909.
Cosby, Wm. L., Richmond, Va., Medical College of Virginia, 1909.
Crafford, M. W., Mulberry Island, Va., University College of Medicine, 1909.
Cunningham, I. W., Richmond, Va., Medical College of Virginia, 1909.
Cooper, J. S., Roanoke, Va., Leonard Medical College, 1909.
Craig, S. D., National Soldiers' Home, Va., Tulane University, 1908.
Coulter, J. C., Cochranton, Pa., University of Virginia, 1907.
Combs, C. D., Max, Va., Baltimore Medical College, 1909.
Dean, T. J., Lewisburg, N. C., University of the South, 1908.
Drinkard, Robert U., New York, Johns Hopkins University, 1909.
Dunford, J. C., Norfolk, Va., Medical College of Virginia, 1909.
Daugherty, Thomas B., Richmond, Va., University College of Medicine, 1909.
Davis, J. L., Richmond, Va., University College of Medicine, 1909.
Davis, Robert A., Newport News, Va., University of Virginia, 1909.
Dix, Sherwood, Chattaroy, W. Va., Maryland Medical College, 1907.

Davis, C. A., Enon, Va., University of Maryland, 1907.
Dodd, E. W., Buena Vista, Va., Medical College of Virginia, 1909.
Divers, George T., Flushing, New York, University College of Medicine, 1909.
EsDorn, C. H., Richmond, Va., South Carolina Medical College, 1901.
Fravel, R. C., Richmond, Va., University College of Medicine, 1909.
Field, Susan W., Lincoln, Neb., Woman's Medical College of Pennsylvania, 1907.
Ferguson, K. M., Ironville, Va., Col. Physicians & Surgeons, Baltimore, 1882.
Grigg, W. F., Norfolk, Va., Medical College of Virginia, 1909.
Gravatt, A. B., Calno, Va., University College of Medicine, 1909.
Gunn, T. A., Lorraine, Va., Tulane University, 1909.
Gay, Carassa, Norfolk, Va., Leonard Medical College, 1906.
Grubb, A. B., Cripple Creek, Va., University College of Medicine, 1909.
Gatewood, W. L., Petersburg, Va., Medical College of Virginia, 1909.
Harris, H. L., Jr., Richmond, Va., Howard University, 1909.
Harrell, C. R., Richmond, Va., University College of Medicine, 1909.
Hundley, G. T., Richmond, Va., Medical College of Virginia, 1907.
Harvey, John L., Richmond, Va., University College of Medicine, 1909.
Hutcheson, J. M., Richmond, Va., Medical College of Virginia, 1909.
Hammer, L., Luray, Va., Medical College of Virginia, 1909.
Hughes, R. E., Saltville, Va., University College of Medicine, 1909.
Hickman, M. T., Hudson, N. C., University College of Medicine, 1909.
Hagner, Francis, R., Washington, D. C., George Washington University, 1894.
Johnson, J. W., Wightman, Va., Baltimore Medical College, 1907.
Jones, C. T., Rawlings, Va., Medical College of Virginia, 1909.
Jackson, J. W., Bridgetown, Va., University College of Medicine, 1909.
Jennings, Wm. E., Richmond, Va., Medical College of Virginia, 1909.
Jones, Thomas E., Bethlehem, Pa., University of Virginia, 1909.
Karp, Lazarus, Portsmouth, Va., Medical College of Virginia, 1909.
Kirkwood, R. C., Lancaster, Pa., Jefferson Medical College, 1908.
Lee, Booker, Richmond, Va., Medical College of Virginia, 1909.
Morton, N. D., Jr., Richmond, Va., University College of Medicine, 1909.
Maddox, Henry L., Richmond, Va., University of Virginia, 1908.
Musgrave, G. H., Norfolk, Va., University of Virginia, 1908.
McDonnald, Wm. S., Hot Springs, Va., Medical College of Virginia, 1909.
McDowell, S. R., Bristol, Va., University College of Medicine, 1909.
McNeer, L. C., Huntington, W. Va., Maryland Medical College, 1904.
Martin, C. E., Richmond, Va., University College of Medicine, 1909.
Newsom, E. M., Case, W. Va., University College of Medicine, 1909.
Nolen, Wm. L., Salem, Va., University City of New York, 1891.
Noland, G. A., Ashburn, Va., Col. Physicians & Surgeons, Baltimore, 1909.
Naff, G. M., Boissevain, Va., Medical College of Virginia, 1908.
Ogilvie, H. S., Philadelphia, Pa., Medical College of Virginia, 1909.
Pettis, K. M., Radford, Va., Howard University, 1909.
Peery, Mary W., Tazewell, Va., American School of Osteopathy, 1909.
Plumer, G. C., Grant, Va., University College of Medicine, 1909.
Pearce, C. C., Norton, Va., University of Louisville, 1906.
Quick, R. A., Falls Church, Va., George Washington University, 1908.
Ray, J. C., Richmond, Va., University College of Medicine, 1909.
Robertson, John W., Baltimore, Md., University of Maryland, 1909.
Rollins, E. D., Snowflake, Va., University College of Medicine, 1909.
Reese, George H., Wirtz, Va., University College of Medicine, 1909.
Roper, L. J., Port Norfolk, Va., University College of Medicine, 1907.
Russel, C. R., Granite Falls, N. C., University College of Medicine, 1909.
Randolph, A. C., Upperville, Va., University of Virginia, 1909.
Slater, S. A., Enfield, Va., University College of Medicine, 1909.
Sigmon, Fred G., Spencer, N. C., University College of Medicine, 1909.
Sumner, J. C., Huffville, Va., Medical College of Virginia, 1909.
Steere, F. E., Richmond, Va., Medical College of Virginia, 1909.
Smith, J. W. T., Mascot, Va., University College of Medicine, 1909.
Sledge, G. R., Parksley, Va., University College of Medicine, 1903.
Simpson, J. R., New Berne, N. C., Medical College of Virginia, 1909.
Smith, J. M., Pocahontas, Va., Medical College of Virginia, 1909.
Spear, D. A., Red Hill, Va., University of Virginia, 1907.
Snarr, S. S., Wheatfield, Va., Maryland Medical College, 1909.
Smeltzer, H. W., Abingdon, Va., University of Maryland, 1909.
Scott, H. S., Waiteville, W. Va., Medical College of Virginia, 1906.
Taylor, J. E. H., Rappahannock Academy, Va., Howard University, 1909.
Tyler, M., Manchester, Va., Leonard Medical College, 1909.
Tarter, W. W., Rural Retreat, Va., Col. Physicians & Surgeons, Baltimore, 1908.
Tudor, T. J., Critz, Va., University College of Medicine, 1909.
Thomas, John D., Washington, D. C., University of Virginia, 1908.
Vest, Walter E., Richmond, Va., Medical College of Virginia, 1909.
Whitehead, W. H., Lowesville, Va., Baltimore Medical College, 1907.
Warren, H. A., Norfolk, Va., Leonard Medical College, 1908.

Warriner, W. R., Crewe, Va., University College of Medicine, 1909.
Weisiger, W. R., Ashland, Va., University College of Medicine, 1909.
Wright, E. B., Norfolk, Va., University of Maryland, 1909.
Womack, J. E., Richmond, Va., Medical College of Virginia, 1909.
Willis, Julius D., Willis, Va., Medical College of Virginia, 1909.
Willis, B. C., Theological Seminary, Va., Medical College of Virginia, 1909.
Winslow, F. R., Hinton, Va., University of Maryland, 1906.
Wolfe, James M., Johnson City, Tenn., American School of Osteopathy, 1909.
Weatherly, O. A., Lindell, Va., Baltimore Medical College, 1909.
Weindell, W. J., Speedwell, Va., Kentucky School of Medicine, 1907.
Young, A. T., Echo, Pa., Maryland Medical College, 1905.

Institutions Represented by Applicants who came before the Medical Examining Board of Virginia Spring Session at Richmond, Va., June 22-25, 1909.	Total Number of Applicants from each College	Total Number of Applicants Licensed from each College	Total Number of Applicants Rejected from each College	Partial Examination	Incomplete or Withdrew
University of South	3	1	2		
Baltimore Medical College	5	4	1		1 (Sick)
Medical College of Virginia	33	31	1		
Leonard Medical College	8	6	2		
Howard University	4	4			
University College of Medicine	33	32	1		
Maryland Medical College	11	6	5		
University of Maryland	7	6	1		
American School of Osteopathy	4	2	2		
University of Virginia	9	9			
Johns Hopkins University	1	1			
Memphis Hospital Medical College	1		1		
University of Nashville	1	1			
University of Pennsylvania	1	1			
Kentucky School of Medicine	4	1	3		
Chattanooga Medical College	3		2		1
Tulane University	2	2			
Jefferson Medical College	1	1			
Woman's Medical College, Pa.	1	1			
College Physicians and Surgeons, Baltimore	3	3			
University of the City of New York	1	1			
University of Louisville	1	1			
College Physicians and Surgeons, Boston	1		1		
George Washington University	2	2			
Massachusetts College of Osteopathy	1		1		
South Carolina Medical College	1	1			
Georgetown University	1	1			
Non Graduates	69			69	
Totals	212	118	23	69	2

Nos. of examination papers.	List of Institutions Whose Graduates were Rejected by the Medical Examining Board of Va., Spring Session, June, 1909. With Percentage Marks of each. College of Graduation.	Year.	Laryng., Rhinol., Ophthal. & Otology.	Chemistry, Toxicol., & Medical Juris.	Anatomy & Embryology.	Physiology, Hygiene & Histology.	Pathology, Bacteriology & Neurology.	Obstetrics, Gynecology & Pediatrics.	Materia Medica & Therapeutics.	Practice, Etiology & Diagnosis.	Surgery.	Total.	Average.
12	University of South	1907	64	75	65	60	75	75	75	75	60	624	69
18	Maryland Medical College	1908	75	85	81	71	70	70	75	60	75	662	73
60	Memphis Hospital Medical College	1909	73	75	75	63	65	57	65	55	70	598	66
84	Maryland Medical College	1909	75	75	83	75	55	61	75	69	60	648	72
88	Kentucky School of Medicine	1908	73	85	76	80	65	71	71	50	70	641	71
90	Kentucky School of Medicine	1908	81	75	72	78	65	75	74	65	75	660	73
100	Chattanooga Medical College	1905	60	50	42	62	25	40	62.5	40	40	421.5	46
101	Chattanooga Medical College	1907	90	70	72	65	40	75	75	75	75	637	70
105	Leonard Medical College	1906	74	75	73	79	50	75	67.5	62	50	616.5	68
112	American School of Osteopathy	1904	77	70	78	68	70	68	.....	72	65	568	71
119	Leonard Medical College	1908	79	70	77	81	67	67	70	65	70	646	71
121	University of Maryland	1909	75	75	75	77	65	76	75	67	60	647	71
129	University College Medicine	1909	84	70	83	75	72	75	77.5	66	60	662.5	73
166	Maryland Medical College	1909	80	75	80	71	62	75	66	70	75	654	72
169	Maryland Medical College	1904	Oral Examination						.....	.....	.....	.....	.....
171	American School of Osteopathy	1909	86	75	79	71	70	61	.....	.....	65	507	72
172	College Physicians and Surgeons, Boston	1907	82	85	65	66	55	70	79 5	75	75	652.5	72
179	Kentucky School of Medicine	1887	Oral Examination						.....	.....	.....	.....	.....
182	Baltimore Medical College	1909	75	80	83	56	68	70	75	66	75	648	72
192	Maryland Medical College	1909	73	85	80	66	62	76	70	68	60	650	72
199	Mass. Coll. Osteop.	1907	80	85	70	77	70	75	.....	65	55	577	72
200	University of South	1909	73	85	86	58	62	75	75	72	65	651	72

INSTITUTIONS REPRESENTED BY THE APPLICANTS BEFORE THE MEDICAL EXAMINING BOARD OF VIRGINIA, FROM THE ORGANIZATION OF THE BOARD, JANUARY 1, 1885, to JUNE 22-25, 1909.	Total Number from each Institution.	Total Number Licensed First Examination.	Total Number Rejected First Examination.	Licensed on Second Examination.	Rejected Second Examination.	Licensed Third Examination.	Rejected Third Examination.	Licensed Fourth Examination.	Rejected Fourth Examination.	Licensed Fifth Examination.	Rejected Fifth Examination.	Rejected Sixth Examination.	Rejected Seventh Examination	Licensed Eighth Examination	Incomplete or Withdrew.	Partial examination.
Total No. before board from organization to June 22-25, 1909.	3729	2051	645	226	136	48	52	8	33	5	5	1	1	1	63	805
University of South	3	1	2													
Baltimore Medical College	5	2	1					2								
Medical College Virginia	33	31			1										1	
Leonard Medical College	8	4	1			1				1	1					
Howard University	4	4														
University College of Medicine	33	32	1													
Maryland Medical College	11	6	5													
University of Maryland	7	5	1			1										
American School of Osteopathy	4	2	2													
University of Virginia	9	9														
Johns Hopkins University	1	1														
Memphis Hospital Medical College	1		1													
University of Nashville	1	1														
University of Pennsylvania	1	1														
Kentucky School of Medicine	4	1	2		1											
Chattanooga Medical College	3		1		1										1	
Tulane University	2	2														
Jefferson Medical College	1	1														
Woman's Medical College Pa.	1	1														
College of Physicians and Surgeons, Baltimore	3	2		1												
University of the City of New York	1	1														
University of Louisville	1	1														
College Physicians and Surgeons, Boston	1						1									
George Washington University	2	1		1												
Massachusetts College Osteopathy	1						1									
South Carolina Medical College	1			1												
Georgetown University	1	1														
Non-Graduates taking partial Examination																69
Totals	3872	2161	662	229	139	50	54	10	33	6	6	1	1	1	65	874

No. of examination papers.	INSTITUTIONS Whose Graduates were Rejected by the Medical Examining Board of Va., AT REGULAR SPRING MEETING, June 22-25, 1909. With Percentage Marks of each. COLLEGE OF GRADUATION.	YEAR.	Hygiene and Med. Jurisprudence.	Chemistry.	Anatomy.	Physiology.	Histology, Pathology, Bacteriology.	Obstetrics and Gynecology.	Materia Medica and Therapeutics.	Practice.	Surgery.	Total.	Average.
204	Medical College of Virginia	1909	74	77	62	76	70	83	77.5	72	60	651.5	72

Editorial.

Colored Anti-Tuberculosis Leagues.

Dr. C. P. Wertenbaker, Surgeon U. S. P. H. and M. H. Service, in the September 3d number of *Public Health Reports* notes that relatively many more colored people die of consumption than white people; that very few colord people get well of the disease, partly because they do not know how to take care of themselves, and partly because many neglect to do so. To remedy this condition, it is proposed to organize an anti-tuberculosis league in each State with a branch in every colored church. A few leading colored men and women from different parts of the State should call a convention of their race, and organize the State League. These leagues should work in harmony with the State and local health officers who would be glad to give their best efforts to help. Full details as to organization, the work of these church leagues, etc. are given; as also some valuable advice of a hygienic nature, which, if observed, would prevent many a case of tuberculosis, and help to restore many another victim to relative or perfect health. The article is worthy the atten-

tion of every public spirited citizen, of boards of health—State and local—and we presume can be had for the asking, by addressing the Public Health and Marine Hospital Service, Washington, D. C.

The National Association for the Study and Prevention of Tuberculosis

Is strenuously endeavoring to encourage the building of small local hospitals in every city and town of the country for consumptives, to prevent the emigration of this class to the Southern and Southwestern States. Consumption, if taken in time, can be cured or checked in any portion of the United States, and the percentage of cures in the East and Southern and Southwestern States is practically the same. Many cases directed to this section are not only denied the privileges and luxuries they might have, but also cause a great drain upon the resources of charitable organizations of the Southwest, when they would be self-supporting in their Eastern homes. Let the doctors of the Eastern States impress upon their consumptive patients the fact that, by proper cautions and following medical directions, they can be cared for at their homes or local hospitals at a much lower cost, and thus relieve the Southwestern States of this heavy tax upon their sympathies and finances.

Medical Society of Virginia.

Program of the Fortieth Annual Session, to be held at Roanoke, Va., beginning Tuesday, October 5th, 1909, has been issued to all members, exchanges, etc. Omission of the fact that the Medical Examining Board of Virginia will have to be nominated for commission by the Governor of Virginia for four years beginning January, 1910, was an accidental oversight. It will be seen from the program that a most excellent session is promised. A very large number of applications for membership have already been received, and members all over the State are urged to secure others.

Dr. Stuart McGuire, Richmond, Va.,

President of the Medical Society of Virginia, after an automobile trip during August through the Middle and several of the New England States, returned to Richmond the last of that month, and immediatedly left by train for Rochester, Minn., to pay a visit of a few days to the Drs. Mayo. He will return in time to open his Surgical Hospital (St. Lukes) on September 15th. A number of repairs and additions have been made to St. Lukes during the summer vacation.

Drs. Bowen & St. Clair.

Drs. Samuel C. Bowen and Charles T. St. Clair, of Tazewell, Virginia, have recently formed a partnership for the practice of their profession, and will be associated under the above name.

Wanted—Salaried position in a sanatorium or hospital, or as assistant to a busy practitioner or as *locum tenens*. Graduated 1904 and been in general practice since. Address, "Doctor," care *Va. Medical Semi-Monthly.*

Wanted—An attending physician, who visits the coal mine daily, desires the help of a young, single man (graduate or third-year student who wishes a lot of experience) to assist him and stay at the mine. Salary. Address, "Mine" care *Va. Medical Semi-Monthly.*

Obituary Record.

Dr. Kent Black,

Of Blacksburg, Va., son of the late Dr. Harvey Black, died on the afternoon of August 12, 1909, a few miles from Blacksburg. While spending the day at his farm, Dr. Black was taken suddenly ill, and the end came before the members of his family or medical aid could reach him.

Graduating from the Medical College of Virginia in 1878, and following in the footsteps of his father, Dr. Black had always taken a prominent place in the profession of this State, and was exceedingly popular socially and professionally. He had been a member of the Medical Society of Virginia since commencing the practice of medicine, and was for three years a member of the Medical Examining Board of Virginia.

In 1894, Dr. Black was married to Miss Mary Bell, who, with his mother, two brothers and a sister, survive him.

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Original Communications.

PELLAGRA—A CLINICAL STUDY AND REPORT OF FOURTEEN CASES.*

By WILLIAM FRANCIS DREWRY, M. D., Petersburg, Virginia.

Superintendent Central State Hospital; Ex-President Medical Society of Virginia, etc.

During the past year there have been under observation and study by the medical staff of the Central State Hospital fourteen cases, which, in their clinical manifestations and course, bear such striking resemblances to cases reported in medical literature as Pellagra, that we have felt warranted in making such diagnosis in these cases. In presenting for our medical staff the clinical histories of and the pathological findings in these cases, our purpose is not to advance any personal views as to the nature, etiology, pathology and treatment of this strange and fatal disease, but to direct attention to the symptomatology and the main characteristics in our cases. This is done in order that others may more readily recognize the disease, treat the symptoms in their early stages, watch its course, search for causes, and perhaps contribute something of value in solving a problem which has become a momentous one in some of the Southern sections of our country, and may be, in fact already is, to a limited extent, one which the Virginia profession may have to combat.

The name "pellagra" is derived from the Italian, *pelle*—skin, and *agra*—rough. The disease is said to be endemic-epidemic in its nature, and is so protean in its manifestations that it would be a tedious task to enumerate all the symptoms and their order of appearance, in the various stages or in the several varieties. One authority designates the following varieties: Cerebral, spinal, ganglia, atrophic, gastric, cutaneous, aphrodisiac, and tetanic. Another gives this classification: gastro-intestinal; nervous, with mania; nervous with paralysis (pellagrous myelitis); *pellagra sine pellagra;* typhoid pellagra (not a very definite type; rather a complication).

There are sometimes observed three stages, the disease gradually developing, with exacerabations and remissions; but in many cases the rather arbitrary lines are obliterated and they rapidly develop and soon terminate fatally. Mention of the more prominent symptoms somewhat in the general order of onset—though there is variation in this respect—will, I think, suffice for the purpose of this paper: —general malaise; lassitude; vertigo; headache; nausea; gastro-intestoinal disturbances; loss of appetite; obstinate or recurring diarrhea; stomatitis; profuse salivation; fetid breath; usually red tongue—which is sometimes denuded, smooth and glistening; burning sensation in the œsophagus; symmetrical skin lesions, usually affecting the backs of the hands, the wrist and lower part of the forearm, the elbow, the dorsum of the feet, the face, neck and other exposed parts. These lesions consist of a redness of the skin (in white subjects)—a dermatitis—an erythema; desquamation; scaly appearance; exfoliation; and in some cases, blebs, leaving a denuded surface; dark pigmentation; frequently itching and burning; in some cases the skin presents a cracked, parchment-like appearance; and in most cases there is a "mummy-like" appearance. There are usually muscular weakness and wasting; emaciation; progressive loss of weight; cachexia; sometimes rigidity of muscles, causing stiffness of joints; half-flexed position of limbs; usually a decided decubitus. Unsteady, occasionally paralytic-spastic gait; a motor-paresis, particularly of the legs; when sitting up a tendency to go forward as if unable to maintain the erect posture; usually tenderness and pain at some points over the back—particularly along the spine and over

*Read before the Southside Medical Association, Courtland, Va., September 14, 1909.

the mid-dorsal region; analgesia or anesthesia corresponding to the site of the cutaneous lesions sometimes exists; sometimes perception of cold is diminished while that of heat is increased; at first exaggerated and later abolished patella reflexes, sometimes varying on the two sides; abnormality of pupils, usually dilatation; sometimes drooping of the eyelids causing a sleepy, stupid look. The temperature varies usually from 97 to 101 F.; the pulse from 90 to 100 or more. The urine is generally lessened in quantity and of a low specific gravity. Sleep is usually disturbed to the point of marked insomnia.

The mental symptoms vary according to the stage and intensity of the disease. There may be, usually are, lassitude, apathy, dullness, indifferene, stupidity, mental feebleness, irritability, and depression, and in many cases symptoms of a pronounced psychosis. In some cases mental symptoms are not significant. The patient often seems in the deepest trouble—has "forgotten how to laugh." Sometimes there is some excitement, confusion, disorientation, retardation, disturbance of apprehension, defective memory, clouding of consciousness, hallucinations, delusions, and as the disease advances profound melancholia and mutism; and later progressive mental deterioration, dementia, etc., set in. In a majority of cases the patients end their lives in a comparatively short time in physical, and also frequently in mental exhaustion.

Some few observers consider pellagra only a symptom-complex, but the great majority regard it as a "distinct morbid entity with its own peculiar morbid phenomena." characterized, as above pointed out, mainly by gastro-intestinal disorders, stomatitis, dermatitis on the parts of the body exposed to the sun, and various mental and nervous phenomena, principally depression, and in some cases symptoms referable to spinal degeneration. There may be remissions and exacerbations. This is true in chronic cases. The disease has not so far been considered contagious, nor communicable Some observers, however, believe it is infectious. Sometimes several members of the same family or group of persons have been simultaneously affected as if there were a common cause. This was the case when three years ago quite a number of cases, chiefly among the negro patients, though there were some white ones, in the Alabama Hospital for the Insane, were at about the same time affected, many of whom died. There was a regular epidemic, eighty-seven cases occurring, fifty-seven of which quickly terminated fatally. It is not hereditary. Persons between the ages of twenty and forty are more liable to have it, though children and elderly people are not exempt. Infants seem to be immune. It is not confined to the poorer classes. The statistics indicate that women are oftener affected than men. The symptoms manifest themselves mostly in spring and summer.

In making a differential diagnosis attention is directed to leprosy, scurvy, eczema, and other skin diseases, ergotism, mercurial poisoning, hook-worm, general paresis, etc., but none of these present the "triad of symptoms —erythema, digestive and nervous disturbances."

As to the etiology there is much doubt. The theory most generally accepted is that certain fungi form on corn, and that these fungi give rise to a toxin, which when taken into the system produce the disease. Yet this theory has been vigorously combatted, with considerable reasoning, by several investigators. The maize theory is commonly accepted in Italy, where the disease has been prevalent for about two centuries, and by several American observers. At all events it is in order that State government authorities and State boards of health consider the advisability of requiring a close inspection of grain shipped into the State; and, furthermore, of the inspection of the products of mills, such as meal, hominy and grits, which are distributed among the people. The auto-intoxication theory has been advanced. The protozoan theory has some strong adherents, who claim the existence of striking similarities between pellagra and the two protozoan diseases—syphilis and sleeping sickness—in their various manifestations. The finding of an organism in the blood of some acute cases is arousing interest, and further investigation is needed to ascertain whether or not this organism is specific. (Wood). While malaria complicates some cases it is not regarded as entering as a causative factor. In some of our cases, there was a specific history and in others tuberculosis existed. As Dr. C. H. Lavinder, of the United States Public Health and Marine Hos-

pital Service, says, "The etiology of pellagra in any definite scientific sense is essentially unknown." No theory should be too dogmatically adhered to until absolute proof has been unquestionably established. As Sir Patrick Manson said in a lecture on tropical diseases, "We cannot be too cautious about adopting decided views on so fundamental a matter as the etiology of disease. Everything depends on this—diagnosis, prevention and treatment."

The prognosis is unfavorable. The typical fulminating type is hopeless. In the chronic or recurring type—those having the annual spring and summer attacks—the symptoms may subside, but return at the elected season. Authorities and observers vary in their opinion as to the length of time a person having pellagra may live—from a few months to several years.

Another interesting enquiry is—What is the relationship between pellagra and insanity? While an insufficient number of cases have been observed and reported in this country to justify definite conclusions, it seems that the relationship in many cases is close. In some cases, mental symptoms have, it eeems, existed prior to the usual physical and nervous manifestations, while in others, the mental and physical symptoms seem to co-exist, in a large measure, from the beginning. In others the physical antedates the mental deterioration. I am not familiar enough with the disease to justify an opinion as to whether or not we are dealing with a gastro-intestinal disease, a tropho-neurotic disease, a distinct type of neuro-psychosis, or some obscure organic diseased condition involving the cerebro-spinal system. These are problems to be carefully and scientifically worked out.

Of the fourteen cases we report, all are negroes. Five men; nine women, the ages varying between 20 and 60. Six were residents of cities, eight of the country, as follows: Danvile, one; Petersburg, one; Richmond, two; Alexandria, one; Newport News, one; Brunswick, three; Sussex, one; Prince Edward, one; Buckingham, one; Charlotte, one; Amelia, one. Five have died, two have recovered, or rather are temporarily without symptoms except of dementia; in seven the symptoms are still evident—one of these is very feeble. Eight of the fourteen came to the hospital within the past twelve months.

With the view of ascertaining definitely whether our diagnosis was correct, we sent full clinical reports of eleven of our cases to Dr. Edward J. Wood, of Wilmington, N. C., who has had extensive experience, and requested his opinion. His reply was:—"Unquestionably pellagra. No hesitation in confirming diagnosis." We also had Dr. Ennion G. Williams, State Health Commissioner, and Dr. T. W. Murrell, of Richmond, a competent dermatologist, to see several of the cases week before last. They are of the opinion that our diagnosis was correct.

TREATMENT.

Since damaged corn is so extensively held responsible for the disease, efforts should be directed towards "proper cultivation, drying and housing" and all imported corn should be inspected and all millers required to furnish only sound meal, hominy and grits. Furthermore, as a precaution at any rate, the diet of pellagrins should be free from any of the products of Indian corn. A generous and nutritious dietary should, however, be given, and the hygienic conditions made as sanitary and as perfect as possible.

As to the therapeutic measures, practically no remedy so far used seems to be of much value. Tonics, such as strychnine, iron, quinine, arsenic, cod liver oil, etc., are usually employed with possibly some benefit in a few cases. Atoxyl (a form of arsenic) is said to have been used by some physicians with marked benefit. It has been suggested that serum therapy might be applicable, but I do not know of its being yet tried. As for the diarrhœa, the usual remedies are practically useless. (Watson of South Carolina, is of the opinion that the diarrhœa is not dependent upon errors in diet for its presence but to a neuropathic manifestation dependent upon disease of the spinal cord that affects the sympathetic system).

In our cases the foregoing general line of treatment, excepting the use of Atoxyl, was followed, and in addition thereto mercury and the iodides were given in those cases in which a specific history was suspected. The two cases that have improved, or rather are at present free from physical symptoms, were kept out of doors or on porches during the acute stages of their illness. We have all our cases isolated from other patients, being in a separate ward

but spending most of the time on an open porch.

It behooves the medical profession, scientific bodies ond boards of health to deal with this new subject—the hidden cause, the prevalence, distribution, prevention, diagnosis, prognosis, etc., in a broad scientific spirit and encourage in every way possible, thorough study and investigation of the problem. While it is our duty to look out for, report and investigate all cases, let us, by all means, be careful, accurate and thorough, lest we report false cases or draw hasty conclusions and thereby cause unnecessary alarm. Let it be remembered that the entire subject is in its incipiency.

I hope that this association will take steps looking to the search for and accurate reports of cases, thereby bringing the subject to the attention of the physicians throughout the State and stimulatng study and investigation. A committee should be appointed to take the matter in hand and devise some means of dealing with the subject and securing the co-operation of all medical organizations, State and local boards of health, and individual physicians, etc., throughout the State.

In preparing this paper, collecting the clinical and pathological data, I am indebted to the assistant physician of the Hospital Staff for valuable service.

The case reports, the pathological and post-mortem findings are as follows:

Case I. Augustus J. (6733)—Admitted first time, September 7th, 1908, sent to his home January 13, 1909, much improved, and returned to the hospital a short time ago, physsical and mental symptoms herein described having returned in an intensified form. He was born and raised in Southside Virginia; age 55; color, black; farm laborer; no education; habits as to alcoholic and other dissipations good (?); general health fair, until about two or three years ago, when, according to the best information obtainable, he began to have occasional diarrhea, feel weak and good-for-nothing and noticed some "skin trouble" on his hands. These symptoms were worse in spring and summer, better during the cold months when they almost entirely disappeared. Have been unable to get family history. Patient said—before he became demented—that he always had plenty to eat, lived in a fairly comfortable house, and worked steadily on the farm, that he got his meal from the neighborhood store, and from corn he raised and had ground at the country water-mill.

From information given in the commitment papers, the patient was "sick" in the Spring of 1908, and in the following September was much weaker, and mental symptoms had progressed; at times he was excited, and at others depressed, and had hallucinations of fear, thinking someone was trying to shoot him.

From examinations on readmission and frequently since, his clinical history is here given. We made a tentative diagnosis of pellagra last fall, and kept the patient under careful observation. Dr. Rea Parker, then on our staff, first observed the symptoms, and suggested the diagnosis, and so entered on the records.

General Physicaal.—Pulse 80 to 100; respiration 18 to 28; temperature 96 3-5 to 99 F. arteries atheromatous; blood pressure 133 m.m. heart irregular; marked accentuated aortic second sound; lungs normal, except slight bronchial breathing over upper left infraclavicula region; general prolonged expiration; liver small; muscles thin and inelastic, producing apparent rigidity or stiffness of joints; progressive emaciation; weakness and loss of weight; general physical debility; anemia; lipoma, 2 1-2 by 3 inches, at right inferior lateral costal margin; has had gonorrhœa; brown discoloration of bulbar conjunctiva; and arcus senilis. There was observed in this and other cases a peculiar odor.

Gastro-Intestinal.—Obstinate and exhaustive diarrhea, with occasional remission prolonged in fall and winter; stools thin, light yellow or dark brown; appetite varied, usually very poor; at times excessive thirst.

Mouth.—Unpleasant breath, stomatitis, salivation, ulcerated gums, tongue flabby, otherwise usually normal in appearance, except sometimes furred, a few small black spots on the dorsum near the end.

Skin.—Extending from the glabella downward, involving the alae nasi, the malar region outer canthi, the upper and lower lips, mental prominence, and on the sides of the neck there was a distinct dark pigmentation The surface of the face covered was somewhat irregularly butter-fly shaped. Over the lower portion of the forehead, the entire nose and

partly over the face there was a hypertrophy of the sebaceous glands, these being plugged with a sebaceous material resembling a typical case of pityiriasis pilaris. The cutaneous affection, the anomalies of pigmentation, and the saborrhœa observed in this and other cases do not correspond with skin conditions frequently seen in cases of insane adolescents. There was a rather "mummy" appearance of the parts affected, involving the thumbs and fingers, and extending from the nails to about two and one-half inches up on the wrists, and all the way around, the line of demarkation being distinct and symmetrical—glove shaped. The skin lesion on the hands and wrists may be described as varying from a dark pigmentation to a dry desquamation and exfoliation, part of the surface being cracked or parchment like, but there was no induration. The skin on the tops of the hands "cleared up" somewhat, in places, leaving a fairly smoot surface. The feet were involved to a limited extent—the external malleolli and superior surfaes of the dorsum showing more or less well defined spots, of a dark disoloration and a slight scaly dessication. About the scrotum, groins, and region around the rectum, there was a moist pruitus. There were also external hemorrhoids.

Nervous and Mental.—Motor paresis marked; unsteady gait; difficulty and awkwardness—as if afraid to trust himself— in walking, sitting down or getting up; bent forward attitude; when walking legs far apart; pain in back and legs, particularly over mid-dorsal region, and on pressure over abdomen; occasional headache, varying in intensity, but usually dull in character. There was slight itching over the surface covered by the cutaneous lesions; patella reflexes were first slightly exaggerated, later abolished; insomnia at night, drowsiness in day. With some remission the mental symptoms were progressive and marked consisting of general apathy, dullness, indifference, depression, retardation, confusion, defective memory, disturbance of attention, clouding of consciousness, incoherence, mutism, melancholia, mental deterioration, etc., and finally pronounced dementia. At no time did the patient laugh or smile. He died Friday afternoon, September 3rd. Dr. James C. Bardin, our pathologist, assisted by Dr. A. W. Freeman of the State Health Department, and Dr. M. S. Brent, of our staff, made a complete post mortem examination within four hours after death. The brain and spinal cord were sent to Dr. Simon Flexner, of Rockefeller Institute, New York. Dr. Bardin's findings were as follows:

Chronic pericarditis; hypertrophy of left ventricle; very marked chronic fibrous myocarditis; cloudy swelling of heart muscle; chronic endocarditis. Chronic adhesive pleurisy, both lungs; atelectasis of lower lobe, left lung; old, healed calcareous tuberculous foci both lungs; chronic passive congestion both lungs; chronic passive congestion abdominal viscera. Cloudy swelling of the liver. Atrophy of the stomach. Acute duodenitis. Chronic atrophic enteritis; acute enteritis with erosions. Chronic and sub-acute colitis. Chronic appendicitis. Arterio-sclerotic nephritis, both kidneys. Arterio-sclerosis and atheroma of all the arteries, extraordinarily marked in the anterior coronary.

(*Report of cases will be continued in next issue.*)

PUBLIC SCHOOLS AND PUBLIC HEALTH.

By CHARLES GILMORE KERLEY, M. D., New York.

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(*Concluded from page* 249.)

The remote effects of a properly adjusted school life upon the child may determine in large degrees his future for good or for evil. Whether he is an addition or a tax to the community, whether he stands to the left or the right of the decimal point, whether he gives and adds his quota to the nation's strength, or whether he becomes an element of weakness, depends upon the influence brought to bear upon him during the ten years of greatest receptivity between the sixth and the sixteenth year—the years that comprise the school life.

England at the present moment is undergoing a severe attack of hysteria, because of its lack of adequate national defence. England can supply herself with battleships and equip an army, but what she lacks, and she knows it, is men to man and officer the army and the navy. What is to be expected of a nation which neglects its children to the degree, as stated by the alienist McDonald, where there

are fifteen to thirty-five per cent. non-educable children in the public schools because of physical defects!

Instead of England raising a fund for national defence it would be far better policy to interest the public in raising a fund for children protection—for the common child as they call him—the future defender of the country. Where are the men that England needs for the army and the ships? Many are physically incompetent for service, and the reformatories, prisons, jails and insane asylums have the rest, due to England's neglect of the children of the country for generations; and our system is little better than theirs.

In Great Britain, physical degeneracy has reached such an alarming degree that a royal commission was appointed to ascertain the cause. The appointing of the commission was the outcome of a debate in the House of Lords a few years ago, during which Lord Heath and the Bishop of Ripon drew attention to the terrible conditions prevailing among the poorer classes. The Duke of Devonshire, president of the council, then admitted that Great Britain's military and industrial outlook was seriously threatened, and promised an inquiry into the matter. The subject was also brought up in the House of Commons by Sir William Anson, the Parliamentary Secretary of the Board of Education, who declared that sixty thousand children now attending Londan's schools were physically unfit for instruction. Sir Frederick Morris stated that sixty per cent of the men who applied for admission into the army were physically unfit. The rejected men were divided into three classes: First, those who were not worth taking to the medical office; second, those who were rejected as a result of medical examinations; third, men who broke down during two years' service. It is estimated that there are sixty thousand men in London who are physically unfit for service.

The report of the Royal Commission in explaining the causes of the deterioration, deals largely, as it must, with the care and rearing of children. The causes of the physical degeneration, as set forth by the Commisson, are insufficient and poor quality of food, defective housing, overcrowding, and unsanitary surroundings. The Commission found that in London 400,000 people live in single-room tenements, 40,000 live five in a room, 8,000 live seven in a room. In the British Isles, 3,205,000 people live with an average of three persons in one room.

The diet of the children was much the same as in our own large cities—wheaten bread, tea, beer, jam and tinned goods. The Commission estimated that sixty per cent. of London children are underfed; they found that children have irregular hours and lack of sleep, that children are on the street until all hours of the night. Increase in the use of alcohol among women is put down as a cause. Children of the alcoholic are found to be neurotic, impulsive and to lack self control.

The report that compulsory education has been a benefit morally, but not physically—long hours of confinement without breaks, in poorly-ventilated, over-crowded schoolrooms, without food suited to nourish their bodies, unwisely clothed, plodding for years over studies that are of no practical use—applies as well to this country. The principle of exercises in the schools was a detriment in that delicate and robust were treated alike.

France with her diminished birthrate and decreasing population, has realized for several years the cause, and more than any other country she has endeavored to remedy the evils attending the care of the young. England has had the fruits of her neglect of years forced on her. Those of us who have seen much of child life among those who have the most children in our large American cities can read ahead and see that in a few generations we, too, will be deploring as a nation the inferiority of the quality of the bone and muscle of those who constitute the most valuable national asset—the so-called poor men, the men who produce, the men and the women who work with their hands.

Child labor, one of the curses in this country, stunts the body, dwarfs the intellect and destroys the flower in the bud. Man is the only animal who requires his young to be self-supporting.

Burbank has rightly stated that heredity is the result of a succession of environments, and that a bad heredity may be overcome by the right environment. Every child during the ten crucial years, from the sixth to the sixteenth year, has three environments:—The environment of home; the environment of school; and

the environment of out-of-door play and amusements.

Every child who is not a confirmed invalid, physical and mental, must do three things: He must grow, and he must acquire knowledge and he must find amusement. How he grows and the knowledge that he acquires depends entirely upon his elders who supply him the environment.

The Environment of the Home: In speaking of the increased responsibilities of the school and that the school must assume reponsibilities which rightly rest with the home, I stated that this was not greatly to be regretted. Trained, well disciplined minds at the head of the home are sometimes found. There are thousands of homes, however, wholly unsuited to the right rearing of children and the cause is rarely poverty. The causes are selfishness, ignorance and depravity and pervade all classes of so-called society and supplies a wretched environment for developing minds and growing bodies.

The School: Such being the truth, the school is called upon not only to furnish the child what he has a right to demand as relates to the school, but of necessity must aim to correct the results of unfavorable home influences. Every school teacher can tell us something of this, and it is the fact back of it that raises the school of to-day to the most important institution in the State and places the profession of teaching above that of all other professions.

Teachers must be well paid in order to attract to teaching, the best minds of the country, and teachers must be paid according to work done and not according to an accident of nature. I can conceive of no smaller mind than one that would pay a woman less than a man for an equivalent day's work.

When through economy, graft or ignorance, we cheat the child, we rob the State—assuming that the object of a national existence is the creation and preservation of a fine stock of mankind.

The school's possibilities and scope have been and will be further extended, and school properties utilized to a great extent. The extension of the vacation school system will be very expensive we are told. The money we all pay as taxes can not be better spent. What is necessary for those who appreciate the value and requirements of the school is to endeavor to influence the public in the right direction, thereby making public opinion; for what the public is willing to pay for, the public will get.

The Environment of Amusements. As stated above, a child must grow. He must learn and and he must be amused; he must play. It has always been my belief that in this inherent trait or tendency we have if properly utilized, the solution of some of our gravest social problems.

It is my observation that there are very few inherently vicious children, and histories of the lives of criminals show us that the seed was sprouted and the plant often fully grown before that individual was sixteen years of age. When children develop criminal tendencies it is because their minds, through vicious influonce at home and elsewhere, have been directed that way.

Practically all children prefer to be honorable and good, and are readily led in that direction; but they must be led by the right kind of association and example, and a means and a very sure one is through the most natural channel of amusement and play. It is the child's nature to be busy, to be occupied; and when not occupied with things that are right he is very apt to become occupied with things that are otherwise, as associations of this kind are always open to him. The formation of different so-called gangs, such as the Foundry gang and the West Side terrors, is because of the demand for occupation.

Twenty-five hours a week is the usual requirement for school attendance, nine to nine and onehalf months a year. This leaves several hours each day, Saturdays and Sundays and holidays and vacations unoccupied; and if this time is not occupied in the right way, the inevitable tendency to occupation in the young means opportunity for unfavorable association, vicious practice and the amusement of the street. Play directors and play instructors must be added to the public school teaching staff in order to fill in the otherwise idle hours and school properties, and public parks must be used for this purpose. Consider the large outlay in value in school properties and used but twenty-five hours a week, nine or ten months in the year!

Instructive entertainment, congenial indus-

trial and health education, games of competition, boys' and girls' clubs could be made to most profitably fill the present idle afternoons, Sundays, holidays and serve a positive and a negative purpose for good—positive in what it accomplished and negative in what it prevents.

Crime among the young exists to a large degree, and is on the increase in all our large cities and is due again to neglect. In the children's courts during the year 1907, 11,446 children came before the children' court of special sessions. This is an increase of 1990 over the previous year and an ncrease of 3,779 over 1903.

If any one doubts that we are unnecessarily raising criminals let him attend a session of the childrens' court. Do you see bright, happy care-free children like those who will greet you at your breakfast table to-morrow morning? Not at all. You will see dirty, ragged, anemic, sallow and wretchedly nourished children with the mark of neglect all over them, and on the face of many will be stamped the cunning or sullen indifference of the hardened criminal. The court records show that ninety per cent. were reared under conditions which must of necessity produce criminals and degenerates. Through neglect of the young during the period of receptivity, we make our criminals, and then we establish courts of law, reformatories, and prisons and tax ourselves to take care of them when they are but a few years older.

A childrens' court is necessary in New York and it is a disgrace to our city that this is the truth. When the city or the State gives its children the correspondingly good care, that an intelligent farmer gives the young farm animals, childrens' courts and reformatories will be abolished for want of use; and this change can only be brought about through the medium of the school and the extension suggested in influencing the physical and mental health of the children of the community. Poverty, according to my observations, plays a small part in the matters we are considering, and when it exists the child must not suffer. The school, with its paternal supervision of every child in its district, could readily discover it.

In the far distant future when we shall have become figures in history, the historians in writing of that period represented by the latter part of the nineteenth and the early twentieth century, will tell of the remarkable progress made by those ancients in science, art, and commerce. They will point out the unevenness of our development, and one of the glaring faults which will be laid at our door will be our lack of care and consideration and care of children. The historians will tell how women left undone women's work at home in caring for the young, and went among the people and to other countries and exploited themselves in propagandas which gave them temporary newspaper notoriety. They will write very briefly of a sect of brown dog protectionists who would take from the child the means of curing dreadful diseases—diseases that maim and kill him—a sect, the historian will state by way of apology and explanation, composed of silly women and men prematurely senile.

My optimism for great possbilities in child culture has been gained by observations from four great sources, covering nearly forty years.

First—Observations on the young of the lower animals.

Second—Observations in institutions for children.

Third—Observations in out-patient work.

Fourth—Observations in private work.

I am one of those fortunate individuals who was born on a large stock farm, and my recollection scarcely goes back beyond the period when I was not engaged in caring for young farm animals. For some reason the motherless, the disowned, the sickly infant animals of the farm came under my care. The first large amount of money to come into my possession was a two-dollar bill which I received when seven years old as an award for the best pig at a country fair—a runt pig which I raised on modified milk fed from a bottle and nipple, and gave unusual care and attention.

I have repeatedly seen sickly lambs that were left to die, develop into the best in the flock by similar means of attention. A female scrub colt was disowned by its vicious mother, was fed a modified milk and given unusual care and developed into a mare that for beauty, docility, speed and endurance, I have seldom seen equalled. Why these demonstrations, and I could give you many more of physical possibilities for good among the lower animals? They had suitable food and were given the care that young animals require, and this gives us

the key to the growth and development of all young animals, whether they be the offspring of the lower animals or of man. Before I was ten years old I had learned that for proper growth and development, young animals require suitable food, cleanliness, fresh air and kindness.

That favorable environments may overcome a vicious and depraved heredity was well demonstrated at the country branch of the New York Infant Asylum several years ago. About ninety per cent. of the children were illegitimate, whose parents with very few exceptions, were from the decidedly lower walks of life. At this institution, the children were suitably clothed, properly fed nutritious food at stated intervals and all led a healthy out-of-door life. During my service in that institution I saw dozens of unfortunately born children develop into strong, vigorous, clean-minded children, because they got what a child has a right to demand and no more. They suffered neither from over-indulgence or neglect. One is almost as bad as the other. These children were sent to homes in the West from the sixth to the eighth year of their age, placed in suitable families and are substantial citizens of those States to-day.

The response of the poorly developed habitually tired, anemic tenement child as seen in out-patient work, to suitable nourishment and a proper living regime, is the usual gratifying result, when the nourishment is to be had and when the necessity for right living may be impressed upon the mother. I have repeatedly known these children to gain as much as five pounds in weight, the first month under treatment, without the aid of a single drug. All that was necessary was to supply the child with those things which a growing child requires.

In private work a large part of the pediatrist's clientelle is composed of children suffering from nutritional disorders, due to overwork at school, to late hours, to irregular and unsuitable meals, to indulgence in confectionery and sweets of various kinds and at any time.

Here again the establishment of right living which relates to food, work, rest and play, letting the child live a child's life and do a child's business, gives what appears to the parents marvelous results.

We have public service commissions, railroad commissions and many other commissions appointed to serve for some definite public purpose.

Every child is a ward of the State and when he is neglected by his parents or guardians as thousands are, does it not suggest that there is a most useful field for a child's protection commission, supplied with assistants whose duty it shall be to see that every child has a square deal, to see to it that every child gets what he has a right to demand?

So far as governmental intervention is concerned, but little is to be expected at the present time. By process of evolution we are still too near our aboriginal ancestors for any broad human sympathy. What we need, what we must teach, and what will eventually come, is "sufficient governmental paternalism to realize that it is the children of to-day who will be the American nation of to-morrow and that they excel in importance every other national consideration."

In conclusion I would have you remember this, that that portion of the rising generations who will do the nation's work, fight the nation's battles, do the nation's thinking, are getting to-day what common sense tells any one a child should have.

They are getting food suitable to the development of their bodies; they have the benefit of fresh air and cleanliness, proper amusement and a life devoid of care. They are being suitably taught in secular and religious ways.

Those who are treated otherwise are to furnish a large portion of the future dependents and criminals and the otherwise useless and dangerous members of society.

132 *W.* 81*st St.*

COMMUNICABLE DISEASE, THE HEALTH OFFICER, PHYSICIAN AND PEOPLE.*

By THOS. L. RICHARDSON, Ph. G., M. D., Baltimore, Assistant Commissioner of Health and Quarantine Officer, Baltimore, etc.

I have been profoundly impressed with the great difficulty in choosing a subject that will be of interest to preclude the possibility of presenting it in a comprehensive manner within the time limit. I therefore, venture to bring before you a few facts concerning *communicable diseases,* which I hope will still be

*Read by invitation before the Shenandoah County Va., Medical Society, held at Woodstock, June 1909.

of interest to you, even though they have become somewhat trite or commonplace.

The Health Officer, the Physician and the people all working together in a harmonious way, can do much to control these diseases.

To those of you who are engaged in the protection of public health and the promotion of hygienic measures, it is encouraging to note that the average period of human life, under forty-five years, has been lengthened by not less than ten years; so that, now the average age is forty-two years instead of thirty-two, because this has been the result of our fight against infections of communicable diseases with which the health officials have so much to deal. Every true physician uses his knowledge, not only to save people from death when they are sick, but also to save people from sickness when they are well, by the use of all prophylactic measures known to him. This is also true of the health officer—National, State and Municipal, but unfortunately their advice has not been heeded until the truths the officials enunciated were driven home to the people by disaster.

It is true that the so-called humorist and thoughtless people, when they are well, have cracked their little jokes and perhaps have made slighting remarks concerning this or that physician or physicians in general, yet deep down in their own hearts they know that whenever a physician has been asked for advice in order that they may keep well, he has always truthfully given that advice to the best of his knowledge and belief. I am glad to see, though that there is getting to be an improvement in the desire of the people to adopt means to prevent disease.

To demonstrate the difference in quickness of the people now, as compared with those of a century ago, to protect themselves from disease, and that this greater quickness is due to the greater knowledge of the people, view for a moment the result obtained in the fight against yellow fever. You know about its terrible ravages, especially in the Southern States and cities, and how, year after year, almost with every return of summer, the people were stricken. Business was paralyzed, and whole towns and cities were practically deserted by the people fleeing from the pestilence, until Major Reed read his preliminary report in 1900, setting forth the results of the splendid work done by himself and his colleagues, Carroll, Lazier and Agramonte.

The people were then quickly informed that they had in their own hands, the weapon with which to save themselves, *i. e.*, to prevent the development of the mosquito—the *Stegomia fasciata* variety, or as it is now known, the *"Stegomia Calopus."* Armed with this knowledge, the people set to work, not only to prevent the invasion by the pestilence into the States, but stamped it out in the hot beds in Cuba and Panama.

Only once since 1900 has exercise of this knowledge been neglected by the people, which resulted in invasion by the disease of New Orleans and the Mississippi Valley.

But even then the people knew that someone had blundered, and quickly called the Federal Government to help them in their distress, and long before frost, which in previous years, was alone effecctive in stamping out the disease, the epidemic was checked and wiped out.

Cholera has not invaded this country since 1872—a period of thirty-seven years. Never before have we been so long without a visitation by this scourge. This was the direct result of the splendid work of Dr. Koch, who, in 1885, said that the disease was due to a living organism—the Comma Bacillus—and he, with others, showed how we could protect ourselves. Consequently, when in 1892, cholera again knocked at our doors, it found the local and Government Health Officers fully armed with the knowledge of the discoveries of Koch and others, and well equipped to put this knowledge into effect, and the result is that we have no cholera.

And so it has been with other diseases, such as typhus fever and bubonic plague; and if Daniel Defoe lived in this century he would not be able to gather material for a book such as he found in the seventeenth century, and published in his "Journal of the Plague year."

You can thus see that the struggle against disease by the Health Officer and the Physician has been successful in many ways, but there is so much left to be done that by comparison, it seems as though we had accomplished nothing. That which remains to be done will prove a longer task, for the reason that we have to convince the citizens that the value of the prophylactic measures suggested by the authorities can be obtained only by each

citizen obeying the rules and regulations laid down.

In order to accomplish this it is absolutely necessary that the Health Officer, the Physician and the citizen should work together in harmony. This, I am sorry to say, is not always so, and it is to be regretted that differences sometimes arise between the Health authorities and the Physician, which can be avoided by the exercise of a little good judgment and some forbearance on the part of each.

The Health Officer may appear to have right and authority with him, but to attempt to enforce regulations in an arbitrary, haughty and dictatorial manner, is not conducive to a hearty co-operation on the part of the physician or citizen. Nor should the Health Officer look down upon the general practitioner with contempt, and ignore his rights in any case; in fact, their relations should be of a reciprocal nature, working together for the general good of the community. It is not unusual though, for the physician in attendance on a case of a communicable disease to fail to observe even the simplest rules of sanitation and prophylaxis, neglecting to exercise that due precaution which is so essentially necessary for the protection of the public. It then becomes the duty of the Health Officer to offer suggestions along these lines, and in doing so the physician becomes offended, when it is pointed out to him that he has been careless or negligent.

The local Health Officer should, of course, be an expert, and competent to advise the physician and people in this particular line, and there should be no hesitancy on the part of the family physician to consult him and ask advise on all matters pertaining to whatever may be for the good health of the neighborhood.

What are you doing to bring about this harmonious condition? What are you doing to help yourselves? What are you doing to help improve the conditions in this beautiful little city, or the community in which you live?

In a case of coughing and a loss of flesh, are you making every effort to find out whether it is a case of tuberculosis or not, or are you afraid? Does fear of the truth lessen or increase the danger of the truth? Does fear that it might be tuberculosis prove that it is not tuberculosis? When you know it to be tuberculosis, do you exercise all precautions to prevent others from being infected?

What about sore throats—do you use all precautions when a child shows evidence of its throat being sore? Do you believe the statement that nearly all sore throats can be communicated from one person to another? Tonsillitis and pharyngitis due to scarlet fever, diphtheria, streptococci or staphylococci show local evidence very much alike in the beginning of the attack. Do you use every effort to prove that the sore throat is not communicable before you expose other people to the disease? After an attack of diphtheria, do you see to it that cultures are made to prove the absence of the diphtheria germ?

After scarlet fevor and measles, do you practice the patience and self denial, so necessary in the control of children until desquamation has stopped? Do you try to prevent typhoid fever and summer complaint by guarding your water and milk supplies, by disinfecting patients stools, by protecting against flies, etc.,? In a word, are you earnestly puting into effect the knowledge of to day against preventable disease? If you are not, then why not? If you have not studied the question, then read and think. If you have not time to do this, then be guided by those whose duty and business it is to read, think and act on these questions.

Against smallpox, yellow fever and like diseases, we have the people somewhat united, because their commercial interest is appealed to. But against tuberculosis, typhoid fever, scarlet fever, diphtheria, measles and summer complaint they are not yet united; yet I am sure they will be when they recognize that these diseases have killed more than all the other great epidemics, and that the prevention is in their own hands.

The education of the public concerning disease by the physician from the platform, magazine and daily press, is slowly, but surely showing the majority of the people that their physical salvation is in their own hands.

Just as soon as the majority recognizes this, then it will put into the hands of Public Officers those weapons that have proven so effective against smallpox, yellow fever, cholera and other diseases. Public officials, however, cannot do all the work that should be done if the people are actively or passively against them.

A very important factor in the limitation of the spread of a contagious or communicable disease is its detection at the earliest possible

moment. This particularly applies to smallpox, which so often presents itself in such mild or modified forms in late years as the result of vaccination, that it is frequently overlooked until a severe case has developed in some one who has failed to protect himself by a successful vaccination. And herein lies the great danger to a community, for the first case that may come into a neighborhood and remain unrecognized may constitute the origin of a virulent epidemic among those who are unprotected by vaccination or a previous attack of the disease.

If you should fail to recognize your first case of smallpox, you should not be unduly censured for it. It, perhaps, is not because you are not a careful and observant practitioner, but rather because of the fact that the opportunity has never presented itself to you to become acquainted with the disease by actual contact with it.

Because of the infrequency with which the disease appears in the rural districts and owing to the beneficent influence of vaccination and re-vaccination, many physicians pass through many years of successful practice without ever seeing a case of smallpox. In fact, the graduate of the present day rarely knows more about the disease than what he reads in his text book. It is then, not surprising that the general practitioner overlooks his first case of smallpox and fails in a diagnosis.

Occasionally an eruptive disease prevails in a community under another name, and it seemingly never occurs to any one that it may be smallpox until it has been noticed that it is only the unvaccinated who are attacked. So much then for the value of vaccination.

Smallpox was at one time as common as is measles now. A hundred years ago one who had not had smallpox was generally one who had not reached adult life. One who was not pitted by this frightful disease was looked upon as somewhat of a curiosity, and every year reaped its harvest of death due to this malady. Now it is just the reverse, and people rest secure from its ravishes just so long as they avail themselves of the discovery of the immortal Jenner, who at the close of the eighteenth century, proved that his method of vaccination with virus of cow-pox, protected the people from smallpox.

One in the twentieth century, then, cannot help but view with amazement the great opposition that has developed against vaccination as a protective against this disease; and doubters of vaccination as a protective against smallpox ought to inform themselves of the terrible ravages this disease has wrought among the savage races and see the many scarred faces of the survivor.

The history of vaccination and the opposition that has in many instances developed against it, is a fair sample of the way in which innovations devised and promulgated for the good of the public are so often misunderstood and opposed, although its value as a protective against smallpox has been established to the entire satisfaction of the physician for many years. In fact, there seems to be a constant disposition in vulgar minds to villify what they cannot comprehend, thus retarding the advancement of science.

It is to be regretted that the people sometimes fail to put into use or adopt means to protect themselves against disaster when they well know what a benefit is derived from a little precaution.

I will demonstrate by reference to what occurred in my own home, Baltimore: The Health Officer and other physicians in the city of Baltimore, for years and years, plead with the people and urge them to be vaccinated at least once, successfully, while there was no smallpox in the city, in order to prevent its development, but always in vain, until the repeated return of epidemics which produced greater and greater losses of trade and life, finally drove the people of the city, in 1882, during a great epidemic of the malady, to pass compulsory vaccination laws, which, having been properly enforced, has kept the city free from a smallpox epidemic for twenty-five years; and the city always will be free of an epidemic until the people neglect to observe their own law.

It is your duty as health officer, your duty as the family physician, to see to it that your people are thus protected while your respective localities are free from this terrible disease. Do not be afraid to vaccinate and re-vaccinate. The operation cannot be performed too often. Remember that immunity for life is not conferred upon the individual by vaccination in infancy. A good custom to adopt is to vaccinate in infancy, at the age of five months;

repeat in five or six years, and at least once in early adult life.

In all the cases of smallpox with which I have become acquainted during my experience as a Health Officer in Baltimore, and later as Quarantine Officer for that port, I have yet to see a severe case of the disease in a successfully vaccinated person. When I get hold of a mild case of smallpox I am just as sure to find a scar resulting from a vaccination performed sometime in early life, and in no instance has a case of the disease been brought to my notice in a person who has been recently successfully vaccinated. On the other hand, all cases of a severe type of the disease which I have treated showed no evidence of a vaccination ever having been performed, nor could any history be obtained of even an attempt to have that very important operation performed at any time in life previous to the attack.

In conclusion, I appeal to you as Health Officer, as Physicians and progressive citizens, while your beautiful little city and the locality in which you may reside is free from this terrible scourge, to vaccinate—vaccinate and re-vaccinate; for it will require persistent vigilance on the part of our profession who are so well acquainted with the horrors of the disease to prevent its invasion into the homes of your citizens.

AN ANALYSIS OF EIGHTY CASES OF LABOR*

By K. P. B. BONNER, M. D., Morehead City, N.C.

In presenting this subject for your consideration, I shall endeavor to make it as entertaining as possible; because I realize that papers of a statistical character are for the most part, dry and uninteresting. Some of the results obtained are greatly at variance with the text-books on obstetrics. This may be accounted for, in part, by the small number of cases reported, but the majority of the differences cannot be charged to this cause.

To begin with, twenty-four, or 30 per cent. of the women were prima-para, and fifty-six, or 70 per cent. were multi para.

Sixty-nine, or 86 per cent. of these cases were vertex presentations, wihch is about 10 to 12 per cent. lower than that given by most authors. Forty-five cases, or 56 per cent. of the whole number, or 67 per cent. of the vertex cases, were L. O. A. positions. Nineteen of the total, or 27 per cent. of the vertex presentations, were R. O. A. cases. Six per cent. of the total number, or 70 per cent. of the vertex, or five cases, were R. O. P. positions.

Nine, or 11 per cent. of the whole number, were breech presentations, and all of these were in the S. L. A. position. Three per cent., or about one in thirty, is the frequency given in most text-books for this position for both premature and mature children.

Two cases, or a little over 2 per cent., of the whole number, were face presentations, and both were M. L. A. One case was a transverse presentation with an arm presenting at the os, but this was converted into a foot by podalic version.

Pathology.—Of the eighty cases, convulsions occurred in seven cases, or 9 per cent., five cases of which were undoubtedly due to toxemia. or were, in other words, eclampsia. Of the remaining two cases, one was, in all probability, due to epilepsy, and the other to hysteria. Four cases were ante-partum eclampsia, occurring about the sixth or seventh month. The other cases occurred during labor with one exception; this case was at term, labor was induced and the child delivered by forceps. A great many of you will say that this is a large percentage of eclampsia, in view of our present knowledge of its prevention, and it would be a high percentage among intelligent people, but in the majority of these ases I did not know that the women were pregnant until called in to treat them for the eclamptic convulsions. Some, even after repeated cautionings to consult me at the first symptom of toxemia, would let the trouble go on until it finally terminated in the eclampsia, knowing at the time that their lives were jeopardized as a result.

I have been very fortunate in that I have never had a case of post-partum hemorrhage or puerperal infection, and no deaths among the mothers as a result of the labor. Two cases came under my care in which the mothers died in a month or more after the birth of the child. In one of these cases, the mother had contracted double pneumonia which induced labor, and an eight months child was born after a protracted labor. She passed the crisis of pneumonia but developed empyema of both pleural cavities to which she finally succumbed. Underlying the whole case was a chronic phthisis of several years' standing. My other patient had no ele-

*Read before the North Carolina Medical Society at Asheville, June 15-17, 1909.

vation of temperature during the puerperal period, sat up on the ninth day and was about the house by the third week. She developed intermittent malarial fever during the fourth week and this quickly changed to a malignant type from which she died just a month after the baby was born with a congestive chill.

It has been my misfortune to encounter one case of central placenta previa with a cross presentation. Convulsions had induced premature labor and I was enabled to check the hemorrhage by performing podalic version and using the legs and hips as a plug for the os.

I have found it necessary to deliver eight cases, or 10 per cent., by forceps, four of which were on account of convulsions and four on account of prolonged labors with weakened condition of the mothers and poor contractions of the uterus. I have had very few perineal tears, and the few I have had could be repaired with two or three sutures. These tears would not have greatly impaired the integrity of the pelvic floor if they had remained unrepaired.

One case of a contracted pelvis occurred in which there was a transverse contraction due to a deformed hip joint. In this case there was a prolonged and hard labor which resulted in a still born child.

Two cases, or something over 2 per cent., were twin labors, making a total of eighty-two children, in the eighty labors. Of the eighty-two children, twelve, or 14 per cent., were still-born. Of this number seven, or 59 per cent., were premature, and four of the premature children, or 33 per cent. of the still-born were macerated. Forty-one per cent., or five cases of the still-born children were full term. In three of these cases, the cause of death was due in all probability to prolonged pressure and asphyxia. Most of the still-born children were due directly to eclampsia. I have found that practically all of the children die when the mother has had true eclamptic fits. In fact, if the mother has ante-partum eclampsia, the child usually dies in utero, and even though there is only a six or seven months fetus in the uterus, labor may be expected within two weeks anyway and we may also expect a dead and macerated fetus. I say this because this has been my invariable experience in ante-partum eclampsia. Even in puerperal eclampsia the child will more likely be dead unless delivered immediately by forceps.

Of all the children born, sixty-one, or 73 per cent., are now living. Twenty-one, or 27 per cent., are dead, of which twelve, or 45 per cent. of the dead were still-born. In other words, of seventy live-born children, 87 per cent. are now living and only 13 per cent. dead. Of the children that died after birth, three died in the first week, one dying as a result of forceps injury. The other two died of obstruction of the bowel, probably congenital. Five, or 25 per cent. of those dead, died of digestive troubles due to faulty assimilation. The other one died of diphtheria at two and one-half years.

Of the children born, forty-six, 55 per cent., have been boys and thirty-six, 45 per cent., girls. The average weight of the boys has been eight pounds and one ounce; while that of the girls has been eight pounds, fifteen ounces. This shows the average weight of the girls to be fourteen ounces more than the boys. The average weight of the two sexes is eight and a half pounds, which is one and one quarter pounds heavier than most authors quote. You will also notice that the girls are nearly two pounds heavier than they are usually given credit in most text-books. The boys make a gain of a little over a half pound from what is usually quoted, but their gain is not enough to keep them ahead of the girls. The usual figures quoted are seven and a half for boys and seven for girls—seven and a quarter pounds for the two sexes. My figures differ materially from the usual statistics. The largest baby which occurred in the eighty-two was a girl which weighed fourteen and one-fourth pounds; and the smallest a boy which tipped the scales at four and a quarter pounds.

Another result differing greatly from that of many observers was the time of birth. I find that of eighty-two children, forty-five or 54 per cent. were born between 6 A. M. and 6 P. M., while only thirty-seven, or 46 per cent., were born between the hours of 6 P. M. and 6 A. M. This shows that the majority were born in daylight instead of at night.

As to the duration of labor, I am unable to give any reliable data, because in a great many of the cases I was called in only after labor had nearly reached the completion of the second stage. However, I have seen cases in which all of the stages of labor only occupied an hour; on the other hand, I have seen a few cases last as long as eighteen or twenty-four hours. I

think I can truthfully say that the average time from the time I am called to the time of the third stage of labor will not exceed four hours.

INTESTINAL IRRITATION—TREATMENT.

By GEORGE L. SERVOSS, M. D., Fairview, Nevada.

During the summer months, owing to the ingestion of fresh fruits and vegetables, many cases of intestinal irritation develop. This condition may, or may not, be accompanied by diarrhea or dysenteric discharges. If the irritation continues for any length of time, an acute ileo-colitis is liable to follow, or in some cases a simple colitis. If this acute inflammatory process is not checked, sub-acute or chronic sigmoiditis with chronic diarrhea develop.

We are all prone to gorge ourselves with the new fruits and vegetables, and frequently tax our digestive apparatus to the utmost; in fact, we ingest such quantities of food as to give nature more than she can use in overcoming the natural waste. In this way, our bowels become overloaded with unnecessary material which furnishes an excellent culture medium for the toxin forming bacteria. Then follows the inevitable fermentative process, and toxins are made and thrown out in large quantities, not only to irritate the intestinal mucosa, but, if allowed to remain, to be absorbed, causing a general autoinfection with the many accompanying symptoms and discomforts.

When such a case is taken in hand early, it is usually an easy matter to combat it. My treatment in such cases is to rid the bowel of its contents with draughts of a saline-effervescent laxative containing 60 per cent. of chemically pure magnesium sulphate. Continue this at half-hour istervals in from one to three teaspoonful doses until one or more watery bowel evacuations follow. When assured that the bowel is empty of its irritating contents, begin giving at intervals of two hours two tablets of the Waugh-Abbott Intestinal antiseptic, each tablet containing

Zinc sulphocarbolate, gr. ss
Calcium sulphocarbolate, gr., j
Sodium sulphocarbolate, grs iiiss
Bismuth salicylate, gr., j.
Menthol, gr., one-fifteenth.

Within six or eight hours usually the patient is free from pain or irritation and is comfortable, and if there has been any diarrhea it disappears within twenty-four hours as a rule. In order to feel assured of an antiseptic condition continue the tablets, one every two to four hours for two or three days after the irritation has apparently been done away with.

Case I.—Myself. During the week of July 18 to 24 our produce dealer brought in a lot of new vegetables and like everyone else in a western mining camp, I gorged myself with these fresh goods. Two or three days thereafter I noticed slight pains in the region of the transverse and descending colon, but paid little attention to them.

Thursday, just before retiring, a sharp colic set in, but this subsided after a copious bowel movement and I spent a comfortable night until about 4 A. M., when I suffered from another colic which was relieved as on the night previous. Although there was a slight irritation in the sigmoid region throughout Friday and Saturday, I paid little attention to it and was able to attend to my work without material discomfort—there being no diarrheal condition.

Sunday morning I was awakened early by a desire to go immediately to stool. The movement was accompanied and followed by considerable pain and I realized that I had been harboring an irritant.

With this realization I immediately took steps to overcome and correct the abnormal condition. I took two three teaspoonful doses of the saline laxative at half-hourly intervals, which was followed within two hours by copious watery evacuations which, owing to the pronounced irritation, continued throughout the day and with considerable pain between times.

After the first movement following the saline I began taking the intestinal antiseptic tablets and continued them, two every two hours, throughout the day.

To overcome the intense pain I took one dose of chlorodyne at noon. By eight o'clock Sunday evening there was very little irritation apparent and when I awoke Monday morning I could not realize that, aside from a hungry feeling, there had been anything amiss. I weighed on Sunday and found a loss of one pound and Monday morning another pound, while Tuesday afternoon the scales showed a gain of three pounds over my previous weight.

My case shows conclusively that cases of in-

testinal irritation should have prompt attention. Had I "cleared out" and "cleaned up" at first appearance of the discomfort on Thursday morning, it is probable that I would have had but one or two watery evacuations following the saline. As it was, I allowed the irritation, which was mostly in the descending bowel to go on until there was a pronounced congestive condition of the sigmoid, which condition accounted for the spasms of intense pain.

DYSPEPSIA—A MISNOMER.*

By W. BLAIR STEWART, A. M., M. D., Atlantic City, N. J.

One of the oldest classifications of diseased conditions is that known as dyspepsia. The old Edinburg Practice under date of 1802 classes it as a distinct disease and gives a list of thirty-five synonyms and subdivisions of this, at that time, very complicated and obscure trouble, and remarks that "Besides these there are a great number of symptomatic species." Even at that day writers of legitimate medicine recognized the impropriety of such a classification. Medical history informs us that the charlatans, medicine vendors, and fakirs all put great stress upon this "disease" and page after page was written on this "Most important of all bodily disturbances." The older writers of past centuries recognized dyspepsia as one of the most formidable diseases with which they had to contend.

Coming down the years, we find dyspepsia classified as synonymous with acute and chronic indigestion, and later as nervous dyspepsia. One of the very latest American systems of Medicine classified dyspepsia among its diseases, and indeed almost every writer on Practice of Medicine has been found by the writer to index or even mention as a synonym the term dyspepsia. It is decidedly noticeable that the patent medicine advertisers of our daily newspapers to-day still write column after column for their lay readers, patterning after our professional writers who often fail to differentiate the real import of this most important symptom.

The term dyspepsia is an unfortunate one, and has been defined in so many ways that its use in medicine is to be greatly questioned. It is not simply a "painful digestion," "indigestion" "nervous indigestion," "lack of pepsin," and many other things; but is a complex word of Greek derivation that means everything digestive and nothing practically or in particular. Prof. George B. Wood (*Practice of Med*; edit. 1847) says, in speaking of dyspepsia—"The name is most unfortunate; as, instead of expressing a particular pathologic state, it merely refers to a result which may flow from different and even opposite conditions of the stomach; and it is not improbable that much of the confusion alluded to has arisen from this cause."

Fagge says—"In health the process of digestion is unattended with any kind of sensation; we ought not to be conscious that we have stomachs; but, under morbid conditions, it may be accompanied with unpleasant feelings, varying in degree from a slight sense of weight or discomfort, up to agonizing pain." This strikes the keynote of the whole subject which is, why render ourselves ridiculous by hiding under the term dyspepsia to shield our ignorance of what the condition really is, whether catarrhal, functional, structural, or specific? We can overloook the mistakes of earlier practitioners whe were handicapped by very imperfect diagnostic aids and methods, but with the present advancement of medical and surgical science there is no excuse for snap judgment and imperfect examination of our case. If we can not discover the real disease let us be fair to ourselves and not call it dyspepsia.

When a patient consults us about some acute or chronic digestive disturbance, it is unjust to simply listen to a relation of the symptoms, look at his tongue, feel his pulse, and prescribe some digestive mixture or tonic. This is too frequently done because we think that as the family physician, we know the patient. This is where we make a mistake and often bring the profession into disrepute. A painstaking examination to fully satisfy ourselves of the real condition not only impresses our patient, but often reveals troubles entirely unsuspected. How can one tell of the involvements of the stomach, gall bladder, pancreas, spleen, intestines, appendix, or uterine disturbances, or reflex conditions, all of which materially influence the digestive tract? Why prescribe pepsin or hydrochloric acid here? A sufficient amount of time should be given to every patient and if there are too many by whom our attention is demanded, better see a few well than many imperfectly.

*Read before the Medical Society of New Jersey. Cape May, June 23, 1909.

A full history of each case should be obtained—even ancestral history if needed. The patient should be placed in the recumbent position and a thorough examination of the abdominal viscera made—not through a lot of clothing, but on the bare skin. A case of acute indigestion is not always simple and should not be passed without proper examination. Urinary and fecal secretions should always be examined where there is the least doubt. Recourse should be had to the test meal, stomach tube, chemical and microscopical analysis. There is even quite a perfect gastroscope with which the inner lining of the stomach may be viewed. Too much care and attention can not be given these cases, particularly the subacute and chronic. When a patient complains of a localized pain after eating, which may be persistent for some days, disappears and again reappears in the same locality, in or near the epigastric region, don't call it dyspepsia but carefully examine for ulcer or beginning ulcer. Classic symptoms are not not always present in the beginning and a fine differentiation is often necessary. Neglected ulcers and cicatricial contractions in the stomach and duodenum frequently become cancerous and it is a matter of greatest importance that an early diagnosis be made. It is well to be very suspicious of every case of chronic digestive disturbance in persons past forty and to prove to your entire satisfaction whether it is benign or malignant.

After exhausting the ordinary methods of examination it is well to remember that the fluoroscope and X-Ray photograph will often present to our eyes the real cause of trouble. So perfect have become the methods of this most wonderful of our diagnostic aids that beginning and advanced ulcers, cicatricial contractions, masses, organic displacements, and foreign bodies are recognized with comparative ease. By the administration of bismuth salts prior to the X-Ray examination it is possible not only to picture the size, location, and condition of the stomach but also the small intestines, the appendix sometimes, and the colon. It is well worth the time of every physician to read the most interesting article presented at the recent meeting of the A. M. A. at Atlantic City on "X-Ray Evidence in Gastric Cancer" by A N. Crane, Kalamazoo, Mich., together with the discussion that followed in the section of the Practice of Medicine. With such a scientific and comparatively exact power at our command we owe it to have such an examination made in our doubtful but yet hopeful cases.

A visit to our large hospitals and clinics in Philadelphia, New York, Chicago or to Rochester, Minn., and other cities where these cases are systematically examined daily and diagnosed beyond the help of medical or operative procedure can not fail to inspire us with the desire to do more careful, better, and painstaking work on this and all lines. The earlier and more thorough our diagnostic methods are used the more lives will be saved, or more comfort will be obtained for our patients.

Proceedings of Societies, Etc.

AMERICAN PROCTOLOGIC SOCIETY.

(*Continued from page 257, September 10, 1909.*)

"Necessity for Routine Examination of the Rectum in Intestinal Diseases:—Illustrative Cases.

By DWIGHT HENDERSON MURRAY, M. D., Syracuse, N. Y.

Dr. Murray's paper was one of special interest to the general practitioner and emphasized the necessity for rectal and colonic examinations in all cases of protracted diseases of the digestive tract, whether special symptoms are directed to the rectum and colon or not.

In many cases of gastro-intestinal disturbances the real cause may be found in the rectum or colon, if sought, though the patient gives no symptoms of such rectal trouble. These are amenable to local treatment.

A thorough examination including rectal and bacteriological examination of the stools, should be made in every chronic intestinal case before beginning treatment. He advised that physicians should not treat patients who refuse to allow the necessary examination.

He reported illustrative cases including so-called intestinal indigestion and dyspepsia chronic diarrhea, cancer of the sigmoid, and internal hemorrhoids.

A case of internal hemorrhoids where the attending physician had entirely neglected to examine the rectum, had been treated by lavage seven months, for so-alled dyspepsia and dila-

tion of the stomach without benefit, and was told that a gastro-enterostomy was the only hope of cure. After an operation for radical removal of the internal hemorrhoids he was cured of his dyspepsia. A careful diagnosis would have saved this patient years of suffering.

The patient's life in one instance (possibly) and certainly the general reputation of the medical profession in all of the cases would have been better had the patients been carefully examined.

This neglect was found to be true not only of the physicians of this country, but of physicians in Europe, who had treated some of the cases in the list reported.

The author made a plea not only for local but bacteriological examination, claiming that every case of diarrhea, continuing for a longer time than is sufficient for nature to eliminate the irritating material that may be causing it, is due to a more serious disease.

There are many local conditions that cause a chronic diarrhea which would be eliminated by a simple operation or local treatment. When allowed to become chronic while depending upon oral medication, frequently the time when a cure could be effected, had passed, and chronic invalidism or death may result.

"Sir Charles Ball's Operation for Internal Hemorrhoids."

By G. W. COMBS, M. D., Indianapolis, Ind.

This author briefly described the operation advised by Mr. Ball for the removal of internal hemorrhoids, which consists: (1) of making a curved incision opposite the pile being treated, terminating in the mucous membrane on either side of the pile, the greatest convexity not including more than one-third of the revoluted anal ring; (2) of bluntly dissecting the pile from the external sphincter, the dissection being carried upward until healthy mucous membrane is reached; (3) of crushing the pedicle in a powerful clamp; (4) of passing a heavy silk ligature subcutaneously in the remaining two-thirds of the revoluted anal ring and through the crushed mucous membrane pedicle, one part of which is constricted in a first tying and the whole of it in a second; (5) of tying the ligature very tightly, thus bringing the remaining two-thirds of the revoluted anal ring up into position, maintaining it there until union takes place and constricting the pedicle so that sloughing will occur.

The results obtained by the writer have not been so favorable as those that should follow the procedure as indicated by the author.

The following are the writer's conclusions:

1. The post-operative pain is greater than after the usual ligature or clamp and cautery method.

2. The duration of the healing period is not shortened because of the sloughing of the ligature from either the skin or pedicle before union takes place, leaving the wounds to heal by granulation.

3. There is a necessity for unusual watchfulness that all ligatures may be removed as they slough.

4. Failing to secure primary union, skin-tabs frequently remain for subsequent removal.

5. No time is saved by this modification of the ligature operation.

6. There is danger of secondary hemorrhage from an early tearing off of the pedicle by traction.

"The Technic of the Injection Treatment for Hemorrhoids."

By DR. EDWIN A. HAMILTON, Columbus, Ohio.

Dr. Hamilton stated that the injection treatment does not have a wide application, as its indiscriminate use is followed by embolus, abscess and other complications, and relapses are prone to occur except in cases especially adapted to this method. The instruments needed are a cone-shaped anal speculum with one broad fenestrum and a special copper-tipped long needle of large caliber with an outside barrel which may be screwed to the needle proper to regulate the depth to which it may be inserted. The solution is 10 per cent. carbolic acid, 90 per cent. oil of sweet almonds. Neither water nor glycerine are used in the solution as they cause pain. When the sphincter is normal or hypertrophied, the hemorrhoids are never strained outside of the rectum and treated there, but are allowed to protude through the fenestrum of the speculum and attended to in their normal location. In cases where the sphincter is dilated and the hemorrhoids are easily replaced, they may be treated outside, but under no other conditions. From four to eight drops are injected in a hemorrhoid, only one injection being made at one treatment. The patient rests in the recumbent

posture for several minutes. No application or dressing is applied. The bowels are moved after the second day. Subsequent treatments may be administered at intervals of five days.

"The Test Diet; Nitrogen and Sulphate Partitions, as an Aid to Diagnosis in Intestinal Disturbances."

By JEROME M. LYNCH, M. D., New York City, N. Y.

The subject of test-diet, as suggested by Professor Schmidt, is one well worthy of study. If, after a proctoscopic examination of the rectum and sigmond, and an examination of the stomach contents, a case is still obscure, the test-diet should be given, and an examination of the feces and a thorough examination of the urine, with nitrogen and sulphate partitions, be made. Otherwise, one cannot conscientiously say he has exhausted all the resources at his command.

These tests, he admitted, are not always conclusive, but in most cases they are of great help; often, a positive solution of doubtful problems.

Of twenty-five cases under observation during the last six months, he found three of especial interest. Case I was referred for treatment on account of moderate diarrhea, with prolapsing and bleeding internal hemorrhoids. The stomach had been previously examined with negative results. Proctoscopic examination, except for hemorrhoidal condition, was negative. Put on test-diet. The specimen of feces examined had a somewhat pasty consistency, a light yellow color, normal odor and showed no macroscopic admixture. Microscopic examination showed the usual amount of striped muscle fiber, carbohydrate food remnants and granular detritus, with an excess of free fat and fatty acids. The starch was properly digested; bacterial flora, not excessive; reaction, neutral. Sublimate test, negative. Fermentation test, negative. The specimen showed evidence of deficient bile admixture.

The analysis of a twenty-four hour specimen of urine showed the specimen to contain no albumen and no renal elements, with a normal daily amount of urine, a normal specific gravity and a normal daily excretion of urea. The sulphate ration as well as the ration of urea and uric acid was somewhat depressed, with the presence of a marked excess of indican.

Analysis of this report disclosed at once the cause of the diarrhea, namely:—deficiency of bile with excess of fatty fluids and depressing of sulphate ratio, causing auto-intoxication.

The other two cases were equally interesting

Relative to the determination of the clinical significance of faulty sulphate and nitrogen partition, the writer stated that the relative increase in ethereal sulphate may be due to one of several causes, among which were mentioned —stasis in the bowel, ingestion of decomposing nitrogenous food, improper digestion of food in the stomach and upper intestine, by diminution or absence of hydrochloric acid and bile, the result of excessive or faulty bacterial fermentation in the lower portion of the small intestine. This process may exist without an actual toxemia and an actual toxemia may exist without this particular putrefactive process; but they are usually associated.

Excess of ethereal sulphate is usually associated with an excess of endoxyl sulphate, though not always. Without means of estimating the amount of the actual products of toxemia, the relative excess of ethereal sulphates is used as a guide, although subject to errors, as are other guides.

Fault in the nitrogen partition would seem to justify the inference that the hepatic function is disturbed. The decrease in the relative amount of urea nitrogen probably indicated the degree of the fault. With this decrease, there is a relative increase in the amount of one or more of the other forms of nitrogen in the urine. In the severe toxemias of pregnancy, pneumonia, etc., this is chiefly in ammonia nitrogen and creatinin nitrogen; in digestive disturbances the increase is in the so-called extractive nitrogen, and in lithemic cases and in those of cyclic vomiting, headache, or albuminuria, in the purin nitrogen as well, particularly during the acute attack. In cases of enteritis or colitis, owing to the destruction of cells, the purin nitrogen is often increased.

Faulty nitrogen partition may exist without a toxemia but a heptotoxemia without a faulty nitrogen partition is practically unknown. Acidosis frequently accompanies a faulty nitrogen partition, but it would seem an evidence of the toxemia rather than of the fault in hepatic function, though this is disputed by some.

"Multiple Adenomata of the Rectum."

By JAMES P. TUTTLE, M. D., New York City.

The distinction between multiple adenomata and polypi is more marked clinically, than histologically. Pedunculated adenomata or polypi may exist in varying numbers without constituting a true multiple adenoma. Age and its relation to the two types; distinction between the two types in proportion to the number of growths; the relative frequency of the growths in different portions of the bowel; growths found largely in the sulci and not in the mucous folds of the bowel were discussed. What is the probability of malignant metamorphosis when not interred with? The tendency to recurrence, in malignant form, after surgical measures? Results of internal and local medication; results of functional rest to the parts? Does radical operation furnish the best hope for the patient, in view of clinical experience? These matters were also duly considered.

"Surgical Treatment of Diarrhea and a Description of a New Cecostomy Which Permits Free Irrigation of Both the Small and Large Intestine."

By SAMUEL GOODWIN GANT, M. D., LL.D., New York, N. Y.

In this article attention was first called to the frequency of occurrence of chronic diarrhea and the simplest and most reliable methods were briefly outlined of diagnosing ulcerative lesions of the colon inducing diarrhea, and also the relative frequency was mentioned between gastric and hepatic diarrhea and those caused by local disease of the large intestine. The author then proceeded to make the following points.

First: That acute attacks of diarrhea could sometimes be controlled by diet, rest and internal medication and, further, that the frequency of the evacuations could occasionally be diminished by these therapeutic measures in chronic diarrhea but that a cure of the latter could be accomplished only in rare instances in this way.

Second: That the treatment of chronic ulcerative colitis by internal medication should be abandoned because it is harmful in many ways and utterly unreliable in so far as a cure of the diarrhea is concerned.

Third: That direct bowel treatment by lavage or medicated irrigation introduced through the anus or from above through the appendix or cecum, is the only rational treatment for diarrhea due to ulcerative lesions of the colon.

Fourth: That operative procedures are contraindicated except in cases where, for any reason, the colon tube cannot be introduced sufficiently high, to insure thorough washing out of the entire large bowel and when operative procedures are declined.

Fifth: That the surgical treatment of chronic diarrhea gives universal satisfaction and that he recommended appendicostomy and cecostomy for the relief of this ailment with the same confidence that he did appendectomy for appendicitis.

Sixth: The relative values of resection, intestinal exclusion, colostomy, appendicostomy, simple cecostomy, and cecostomy with an arrangement for irrigating the small intestine, (Gant's operaton), in the treatment of chronic diarrhea, were fully discussed. The results of his experience show that appendicostomy and cecostomy could be performed most quickly, were the least dangerous, give the best results and were less often followed by unpleasant sequellæ than the other procedures.

Seventh: He stated that formerly he was prejudiced in favor of appendicostomy but that a more recent and larger experience had caused him to look with greater favor upon cecostomy especially when combined with irrigation of the small intestine. He maintained that his cecostomy was suitable in all cases of chronic diarrhea because it could be employed when the frequent stools were due to both an enteritis and an ulcerative colitis and when the lesions were confined to the colon alone; and, further, that his operation should supercede appendicostomy, in many instances, because the appendix was frequently unfit for irrigating purposes because it was too short, too narrow, strictured or bound down by adhesions and often had a tendency to become necrotic, slip back into the abdomen, become closed when not kept open by the introduction of a catheter and that appendicostomy was not suitable when the small bowel was diseased.

Eighth: He then briefly described the technic of his cecostomy with provision for small intestine irrigation, the main idea of which consisted in making an opening in the cecum and inserting two tubes, one into the cecum and the other into the small intestine through the

ileo-cecal valve by the aid of a catheter-carrier. He claimed that the advantage of this procedure over other operations, was that either the small or large bowel could be irrigated at will and that there was no fecal leakage about the catheters.

Ninth: In concluding his remarks, he summarized the results obtained by him in the surgical treatment of chronic diarrhea by the through and through method and reported 38 cases treated by appendicostomy, and 14 by cecostomy, 8 of the latter being operated upon by Gibson, and the remainder by his new procedure, and said that the universally successful results obtained by surgery in this class of cases is far better than those obtained by the use of the time-worn way, where they depend upon dieting, rest and medication, as practiced by many physicians to-day.

"A Report of Two Cases of Anomalous Sigmoid."

By ARTHUR HEBB, M. D., Baltimore, Md.

One case was an extremely long sigmoid, reaching from the mammary line to a point midway of the thighs, when withdrawn from the abdomen; the second case was a short sigmoid, with a mesentery 3-4 inches in length, situated above the crest of the ileum, on a line with the lower border of the last rib, coming off from the descending colon. It was only 4 inches in length. The descending loop, with no mesentery, ran down over the bifurcation of the left iliac artery and ureter; then forward, hugging the left side of the pelvis and down over the anterior and posterior branches of the internal iliac artery where it joined the rectum.

"Nevus of the Anal Region with Report of a Case Associated with Internal Hemorrhoids."

By LEWIS H. ADLER, Jr., M. D., Philadelphia, Pa.

The author of this paper mentioned the rarity of this condition as an anal affection. The patient whose condition was detailed was a male, aged forty, whose habits were good. From birth he had a noticeable fullness at the anus, which as he grew older occasioned him considerable annoyance when walking and at stool. When twenty years old he had had an operation for hemorrhoids performed, which temporarily gave relief. As time went on his hemorrhoidal trouble returned and the external congenital fullness became worse. Bleeding frequently attended his efforts to have an evacuation, though the bowels were never, what might be called costive.

Examination prior to operation, revealed a mass of thickened skin, of a dull purplish hue, surrounding the anus, about two inches in width and elevated from the surrounding skin about 1-16th of an inch. Scattered over this area were numerous hairs. The anus was quite patulous, and, upon bearing down, a hemorrhoidal mass protruded and the external portion, around the anus, visibly increased.

A diagnosis was made of nevus associated with internal hemorrhoids, and an operation was advised to which the patient readily consented. At this time, he was apparently in fair physical condition and by no means markedly anemic, although his color was far from normal and he lacked what might be termed resistance. His weight at the time was 151 pounds—his usual weight being stated to have been 170 pounds.

An operation was performed, on March 29th five days after he was first seen by the writer. The patient took the anesthetic very badly, it requiring over half an hour to get him in a condition to be placed upon the operating table. After the removal of the hemorrhoids, which were as large as any as the writer had ever seen, the tissue composing them being much thicker and denser than is usually encountered in ordinary cases, the patient's condition was that of profound collapse. The usual clamp and cautery method was used for the removal of the five hemorrhoidal masses present. After the administration of a hypodermic injection of atropin and strychnine, the patient rallied, and the nevus was then excised. The removal of the latter caused very little loss of blood, so much so, that its absence was remarked upon by several of those who witnessed the operation, and during its removal numerous veins were noticeable upon the under side of the growth, which stood out, in their distended condition and showed a characteristic bluish color.

By the time this step was completed, the patient's condition was bad again, the pulse weak, and the skin moist. The usual dressings were applied—no attempt being made to unite the edges of the wound and the patient was removed to his room where a hypodermoclysis was promptly given to which was added four

ounces of whiskey. His condition gradually improved but within five hours he was dead. The manner in which he died led to the inference that his death was due to a cardiac embolism.

The pathological findings of the specimen removed as made by the pathologist of the hospital, Dr. James A. Kelly, showed that the growth was that of a simple nevus.

"Appendicostomy as an Aid to the Treatment of Malignant and Intractable Dysentery."

By JOHN L. JELKS, M. D., Memphis, Tenn.

In reference to this subject, the author stated that when amebic infection had become very chronic or had extended into all the parts of the colon beyond the use of local measures, and, in some instances, of acute malignant cases, appendicostomy should be performed and irrigation practiced through the appendical stump. The water is allowed to pass out through the rectum into a catch-basin and is not an unpleasant method of treatment. Dr. Jelks prefers the method suggested by Dr. James P. Tuttle, of New York City, who conceived the plan of allowing the appendix to remain undisturbed after anchorage, for a sufficient time (three or four days), to establish adhesions about the proximal end, before cutting away the distal portion and using the appendical stump-lumen through which to irrigate with the desired solutions.

Dr. Jelks practiced this method and irrigated the colon with formalin-boric, copper-phenol-sulphonate, quinine, and normal salt solutions with gratifying results. It was observed, however, that irrigations thus given did not effect a cure. Topical applications (per sigmoidoscope or rectoscope) were in all cases used in conjunction.

The method as used by Weir, and as advised by Tuttle, is practically free from danger, and the author believes is not more hazardous than appendicostomy, and the after-effects are not at all unpleasant to the patient in the ways and degrees that a colostomy must be. He sees no great danger of hernia or wound infection if proper precautions are taken in dressing the same. By this method one may practice almost continuous irrigation of an inflamed colon and rectum with no special degree of pain or discomfort to the patient,—the appendix being used as a nozzle, directing the solution into the colon.

He does not advise appendicostomy except in a small percentage of cases, mostly chronic ones, but in these, he insists that it is a most valuable aid to treatment and that the operation itself is practically free from danger, as is appendectomy when the appendix is not the seat of infection.

The author concludes his article by stating that in all cases requiring appendicostomy we should not permit the stump to close before the expiration of one year. He has been forced to reopen an appendical stump three months after closure and resume irrigations. This was accomplished in his office, but it may become a difficult matter to find the lumen of a closed appendix.

"Primary Gonorrhea of the Rectum in the Male."

By ALFRED J. ZOBEL, M. D., San Francisco, Cal.

The writer stated that a review of the literature for the past five years showed very little to have been written on the subject of rectal gonorrhea, and the cases reported have been rectal gonorrhea in the female and for the most part secondary to an infection of the genital tract.

It was also stated that gonorrhea of the rectum in the male is almost always the result of sodomistic practices, and when so, can be considered of the primary type. The condition has been rather rare in this country but since the influx of foreigners from those countries where unnatural practices are common, more cases are now seen.

The cases reported by the writer were seen in the rectal clinic at the San Francisco Polyclinic and were in American born boys of 16, 18 and 20 years of age, respectively. They belonged to the tramp class and were of a rather low order of intelligence. They were ignorant of their true condition and came to the Clinic with a self-made diagnosis of "piles." When made aware of the true nature of their trouble it had a markedly depressing effect upon them, which in one case, after a few weeks, developed into a condition resembling the neurasthenia which often accompanies a chronic posterior urethritis.

The symptoms complained of, briefly summarized, were: All complained of such soreness about anus and rectum that they did not care to stand; while walking was an effort and caused great pain. At the time of bowel move-

ment they suffered such excruciating pain that they hesitated to pass their feces, and had become quite constipated. Two were annoyed by discharge from the anus, while one was unaware of its presence, although it was found on examination. In one, the discharge was streaked with blood, and bleeding was noticed at the time of defecation. One complained of an itching sensation about an inch up from the anal aperture, and had severe pain on the drawing in of the anal sphincters. Their appearance was feverish, worried and haggard, and they felt weak, ill and distressed.

It was impossible to make a digital or instrumental examination at the first visit, on account of the severely acute pain caused thereby. Therefore, whenever there is the least suspicion of the possibility of a specific inflammation of the anus and rectum, the case should be treated as if it actually exists, and the ultimate diagnosis left to the future. When the acute symptoms have subsided under treatment there can be seen excoriations and fissures about the anal orifice and in the canal, with marked redness and infiltration of the mucous membrane of the anus and rectum, together with the presence of a purulent secretion. Examination of this secretion shows the presence of the gonococcus.

The author believes that gonorrhea of the rectum in the male is a much more common condition than is suspected by the general profession. Many of the latter even do not know that such a condition could exist.

The treatment is directed towards keeping the parts clean; relieving the severe rectal symptoms; reducing the inflammatory exudates; keeping the fecal movement soft; healing the ulcerations and destroying the infective agent.

The author further brings out the important point, which he deems worthy of consideration, that there seems to be no reason why complications, such as gonorrheal arthritis or an endocarditis could not arise. While so far as he is aware, no cases of an endocarditis or an arthritis resulting from rectal gonorrhea have been reported, yet it would be well for the internist to bear in mind that an examination of the rectum might furnish the clue in a baffling case, where the etiological factor is missing.

"Operation for Anal Pruritus."

By THOS. CHAS. MARTIN, M. D., Washington, D. C.

The use of a solution of cocaine and adrenalin secures local anesthesia and a dry visible field. Radiating incisions do not endanger the nutrition of the parts. Corrugation of the flaps may be effaced by traction of their margins. A skin-tag may be removed within an eliptic incision, which by suture may be given a linear form. Radiating wounds require no suture, coaptate automatically when the patient is in extension, and heal by first intention.

Book Notices.

Modern Medicine—Its Theory and Practice. Edited by WILLIAM OSLER, M. D., Regius Professor of Medicine, Oxford University, England, etc. Assisted by THOMAS McCRAE, M. D., Associate Professor of Medicine and Clinical Therapeutics, Johns Hopkins University, Baltimore, etc. Vol. VI. **Diseases of Urinary System—Diseases of Ductless Glands—Diseases of Obscure Causation—Diseases of Muscles—Vaso and Trophic Disorders—Life Insurance.** Illustrated. Philadelphia and New York. Lea & Febiger. 1909. 8vo. 799 pages. Cloth, $6 net; leather, $7 net; half-Morocco, $7.50 net.

Modern Medicine is made up of original contributions by American and foreign authors—thus giving it a cosmopolitan value. The subjects considered in this Sixth Volume are named above, in the title. Each section is a monograph in itself, and with the best of selected authors, it must be considered standard authority, and well up to date. We are glad to see in such a system a full section on "Medical aspects of Life Insurance," which matter is now becoming almost a specialty in medicine. None but the competent and truly conscientious doctor should be selected as a Medical Examier, who should be ever studying methods This Part VI by Dr. Charles Lyman Greene, is an excellent guide. But the entire Volume VI is specially rich in deaiing with subjects that come almost daily under notice of the practitioner, and if he is not a regular subscriber for the complete seven volumes, he should at least possess himself of this volume.

Volume VII will complete the set, and will be devoted to diseases of the nervous system.

Editorial.

Pellagra.

The article begun in this issue by Dr. William F. Drewry is the first contribution on the "pellagra" in any Virginia medical journal. Much interest especially in the Southern States has been aroused in the subject be-

cause of the appearance of the disease in this country. A few cases have thus far been reported in States north and west of Virginia.

In connection with the article by Dr. Drewry, we would call special attention also to "Public Health Reports," No. 37, for September 10th 1909, issued by the Public Health and Marine Hospital Service. That publication contains "Notes on Prognosis, Prophylaxis and Treatment of Pellagra," by C. H. Lavinder, Passed Assistant Surgeon, U. S. P. H. and M. Hospital Service. It does not seem that as yet any specific curative treatment has been discovered. It is remarkable how large a percentage of cases are found among those mentally affected.

Dr. Drewry's cases emphasize a symptom or sign not generally heretofore specially mentioned—namely, that the patients cannot or will not laugh.

We regret that the limit of our space compels us to divide Dr. Drewry's paper, reserving reports of cases for the first October number.

American Association of Clinical Research.

Announcement is made by Dr. James Krauss, 419 Boylston St., Boston, Mass., Chairman of Committee, of the organization of this Association, October 27, 1909, at John Ware Hall, Boston Medical Library, 8 Fenway, Boston. The purposes are, first, to ascertain the present exact status of clinical medicine and surgery; and, second, to advance clinical medicine and surgery by the conjoined clinical method, or any other method that will insure exact and abiding results. For further information, address the Chairman of the Committee, Dr. Krauss.

Medical Society of Virginia.

A printer's error in the program of the fortieth annual session at Roanoke locates the hall of meeting as at the corner of Eleventh street and Church avenue. There is no such location in Roanoke. It should be simply *No.* 11 *Church avenue*—half a block from the corner of Jefferson and Church avenue.

Owing to misunderstanding as to the time and places of meeting of the doctors of the three Congressional Districts which have failed to nominate their Executive Councilors, full announcements will be made during the first meeting of the session.

The Tidewater Medical Society,

At its recent meeting, held at Urbanna, Va., elected the following officers: President, Dr. W. P. Jones; vice-presidents, Drs. J. W. D. Haynes, J. N. DeShazo, A. C. Palmer, Claybrook Fauntleroy; secretary and treasurer, Dr. P. W. Brown. Papers were read by Drs. W. S. Christian and C. D. Marchant. The next meeting of the society will be held at Saluda, Va., June 12, 1910.

The Moore's Brook Sanitarium,

Established in Charlotteville, Va., six years ago, for the treatment of nervous and mental diseases, has very successfully filled a need long felt in this State for such a hospital. We extend to the institution our congratulations on this anniversary.

Superintendent Virginia State Tuberculosis Sanitarium.

Dr. William D. Tewksbury, who for a year was physician at the District Tuberculosis Hospital, has been appointed superintendent at the Virginia State Tuberculosis Sanitarium, at Catawba.

The Mississippi Valley Medical Association

Has issued the Preliminary Program of its thirty-fifth annual meeting, for October 12-14, at St. Louis, Mo., with headquarters at the Southern Hotel. As many prominent doctors are on the program for papers, the session promises to be unusually attractive.

The Southside Virginia Medical Association

Held its twenty-sixth session at Courtland, Va., September 14th, Dr. C. W. Astrop, of Surry, Va., presiding. After an interesting scientific program, the Southampton Faculty tendered the members and guests a luncheon at Hotel Southampton.

Dr. Stanley H. Graves,

Of Norfolk, Va., has been appointed by Governor Swanson a member of the State Board of Health from the Second Congressional District to succeed Dr. Charles R. Grandy, resigned.

For Sale—$3,000 cash practice, in a railroad village. Nice house, all necessary out-buildings, and conveniences, good roads, fine country with churches, schools, etc. No opposition. Address "W.," care *Virginia Medical Semi-Monthly.*

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Original Communications.

THE NEGRO AS A FACTOR IN THE SPREAD OF TUBERCULOSIS.*

By TRUMAN A. PARKER, A. B., M. D., Richmond, Va.,
Chief of the Richmond Board of Health Tuberculosis Dispensary; Visiting Physician to the Virginia Hospital; Instructor in Medicine, University College of Medicine, Etc.

The time was when the physician's highest aim was to cure his patients "safely, quickly, and pleasantly." Later came the conviction that while it was an excellent thing to secure a speedy recovery from disease, it was still better not to get ill at all. From this conviction sprang Preventive Medicine, a branch that has become a science with the development of the germ theory of disease. Its teachings have become popularized, and every one is learning to fear "germs."

The evolution of modern civilization overwhelms us with its multitudinous questions, and it is not a cause for wonder that the average mind fails to grasp fully the details of the many present-day theories. So in the theory of infection, we find among intelligent people as well as among those less qualified to judge, rabid infectionists and obstinate unbelievers.

An unreasoning dread of typhoid fever is very prevalent in the rural communities, while tuberculosis—consumption—is the *bete noir* of the cities.

It is undoubtedly true that both of these diseases are to be treated with the utmost respect, and the sufferers therefrom duly prevented from spreading their malady. Still I personally believe that we frequently overrate the danger from the exposed enemy, while being decimated by the concealed foe. I know a gentleman of unusual mental attainments who never let his children travel without a bottle of sterilized water for drinking purposes; they drank only milk that had been sterilized (Pasteurized); and each one of the eight had a complete individual set of table utensils, lest some horrid germ infect one and spread to the others. On the other hand, a gentleman recently told me that no one could make him believe that consumption was "catching." He knew a man, he said, who had three times been married, only to have each wife fill a consumptive's grave, but the husband never caught it.

Of course, any physician knows that it was not impossible for the husband to have infected all three of his wives, and quite possible for him to have transmitted the disease to the second and third. But my friend could not assimilate the idea that, under the guise of "weak lungs," "a tendency to take cold," "a touch of malaria," "catarrh," etc., a person can wage an almost equal fight with the tubercle bacillus, and as a very chronic case of mild consumption scatter the germs right and left for those of us with less resistance to gather and succumb to.

According to the varying experience of different observers, only one to four out of every ten consumptives gives a history of family exposure (or heredity), and any physician will tell you how seldom his tubercular patients can say from whom they contracted the disease.

The immunity from tuberculosis enjoyed by the employees in a tuberculosis sanatorium is recognized, as is the fact that the same immunity spreads through the surrounding neighborhood. In other words, where there is most phthisis, there is less "phthisophobia" or unreasoning dread of the disease.

In such resorts we find accurate knowledge, and accurate knowledge brings security. A cough arouses suspicion; suspicion and public opinion demand that the cough be classified,

*Presented at the Lynchburg meeting of the State Conference of Charities and Corrections, May 17-19, 1909.

and, if tubercular, that its unfortunate possessor take precautions.

Elsewhere a slight or occasional cough is *not* regarded with suspicion, but, under some misleading name, it is allowed to progress until tuberculosis, if such be its cause, has made itself patent to all. Then, when once branded consumption, though considered harmless until that time, it immediately becomes a demon seeking whom it may devour, and its known victim a pariah to whom no boarding house, no hotel, and frequently, alas! no general hospital, is open. Even his relatives and friends may plainly show him that he is no longer welcome in his old haunts. Is it any wonder that he dreads exposure?

Every one is afraid of contracting the disease from *him,* and yet *he* has no idea as to the *source of his infection.* Does not this condition of affairs seem paradoxical?

There are twenty thousand cases of tuberculosis in Virginia. Ten thousand of these, at least, do not know how they became infected. Personally, I am fast inclining to the opinion that the average individual, knowingly afflicted with pulmonary tuberculosis—consumption—is less liable to communicate the disease to others than half a dozen of the people in whose tracks we follow, doing our day's work, and who are unknowingly suffering from this disease.

When I say the "average individual," I, of course, do not mean the flotsam and jetsam of humanity, who are morally and mentally incapable of taking ordinary precautions for their own welfare, much less for that of others. I mean the moderately moral and moderately intelligent person who forms the chief class in all strata of society. Should this conviction be true, it is assuredly a subject for the earnest consideration of our best minds, and it is in the hope of helping you find an available remedy that I offer this discussion.

Bearing in mind the fact that more than one-third the people of our State are negroes; that consumption is from two to three times as prevalent among the negroes as among the whites; that wherever service is rendered the whites, that service is rendered by negroes; that consumption is a disease so insidious in its onset, and in most cases of so chronic a nature, that its hold upon its victim is frequently not discovered until it has existed for months or even years; and that its course is more frequently characterized by an intermittent cough than by a constant one, and by periods of temporary improvement, during which one may do light or even heavy work, than by a steady and rapid loss of strength. I say, bearing all these facts in mind, we see at a glance how important to *us* becomes the question of tuberculosis among the negroes. The humanitarian side of the question, great as it is, pales into insignificance beside that of self-preservation and the demands of political economy.

At the Richmond Board of Health Free Dispensary for the colored tuberculous during the past sixteen months, 116 tuberculous patients applied for advice and treatment. While this was but a small proportion of Richmond's phthsical negroes it is enough for our present purpose, especially when we remember that they were ambulatory cases, and hence were still following their accustomed vocations, or had but recently relinquished them.

And what were these vocations? Besides housewives were the following: Cooks in private families, housemaids, house cleaners, seamstresses, nursemaids, Pullman porters, hotel waiters, hotel cooks, laundresses (at their own homes), steam laundry workers, school children, school teachers, mill and factory hands, delivery boys, porters, drivers, etc. Of course, we cannot assume that there is any unfortunate who arises in the morning from a bed whose linen was washed by a tuberculous laundress and goes down to a breakfast delivered at his back door by a tuberculous negro boy, prepared by a tuberculous cook, and served by a tuberculous maid, then repairs to his office cleaned (?) by a tuberculous scrubwoman, and later mops his fevered brow with a handkerchief laundered by the same tuberulous laundress, and perhaps lunches at a hotel where a tuberculous cook and waiter serve him!

No matter what the underground rumblings of France may portend, Paris laughs. And so do we laugh at this exaggerated picture. But has it not a very serious side?

I recently attended a reception, and all the guests were doctors, and had a most tempting waiter presented me by a very healthy looking negro. But I knew that a few weeks previously he had been expectorating tubercle bacilli, for the dispensary bacteriologist had found them. I hoped that this negro's asser-

tion that he had stopped coughing was not influenced by the need of earning a livelihood.

Recently a lady telephoned me about her servant, who filled the position of housemaid and dining-room servant. Her fears had been aroused by the fact that the girl had been coughing for *a long time*—several months, and having seen the T. B. exhibit in Richmond, she feared consumption. And so it proved. The girl was most obstinate and careless, however, refusing to believe she had tuberculosis, for she "didn't cough much," she said, "just now and then," and despite the help given by her former employer and the Associated Charities of the city, forsook the dispensary and let none of her friends know her whereabouts. Several times we heard of her endeavoring to fill a housemaid's position, but, her disease manifesting itself, she was forced to leave, and in six months she filled a consumptive's grave. How much harm had she done others before the infectiousness of her cough was determined? How many people "who have no consumption in their families" had she infected?

Not long ago one of Richmond's most prominent men called his physician to say that his nurse, of whom he thought most highly and who had charge of his four children, had been coughing a good deal of late and "seemed right run down." An examination was made and the woman, a faithful servant of middle-age, was found to have an advanced case of consumption and was expectorating untold millions of germs. How many had she elminated before her disease was discovered? Of course, no one can say; nor can it be said how many whites and blacks were exposed during this period to infection from her.

Just one more illustration and I shall leave other cases for you to gather from friends and other physicians who know of similar cases without end. This again was a nurse, a girl of 16, plump and the picture of African health. She slept with a sister fatally ill with consumption. The visiting nurse, of course, stopped that, but on one of the latter's visits, while the sisters were together, heard the stronger girl cough. Just a little bit of a cough, the kind that only a "suspicious" person would notice. She was brought to the dispensary and examined; her lungs seemed in excellent condition, but some expectoration was secured and there were the germs.

I believe this girl owes her life to the visiting nurse, for she is now considered cured, and it is not improbable that her small white charge is similarly indebted.

Does not this case give us the key to the problem? Had there been a refuge for the dying sister, the other would most probably have escaped infection. Had it not been for the visiting nurse and the dispensary, the disease would have gained a strong hold upon the slightly infected sister, and caused her, unknowingly, and in all innocence, to spread the infection to her small white charge and others.

Not long ago it was customary to say of this hunch-backed child, and of that one with hip-joint disease, that its nurse "let it fall." How long before we say "its nurse had a cough, but they didn't know it was tubercular?" Such an explanation will fit far, far more of these cases than the "fall" theory, for we now know their ailment to be the result of tubercular infection.

When we finally determine that one of our servitors has consumption, we promptly dismiss her from our employ. Then we congratulate ourselves, and receive the congratulations of our friends upon having found it out in time. Oh, the irony of it! The poor creature has probably done as much harm as she would do, and has furthermore learned the cruel necessity of hiding her ailment. While ridding ourselves of that particular source of infection, we pass it on, if the patient be strong enough, to work its havoc in another household—in another *white* household; if too weak, she goes to some darkey abode, and sooner or later those who have harbored her are carrying the infection to their daily work, and leaving it day by day for their employer and fellow-employees to gather.

Under the guise of a "chest cold," a "touch of bronchitis," "throat trouble," "stomach trouble," "catarrh," and other misnomers without end, we do not challenge their malady, and few negroes can afford the expense of an examination thorough enough to diagnose consumption in its early stages.

Worse still, conditions are so shaping themselves that they will not wish to know the truth. For as soon as they know it, and others know it, they lose their position and become dependent on a most scant charity whose threadbare cloak is of little avail against the discomforts

of sickness, hunger, and cold. What then can be done?

The only practicable steps to check the spread of the disease consist in the establishment of free disepensaries in the cities and towns, and and of medical examiners in smaller communities, who will diagnose the condition in its earlier stages, and *without cost* to the *indigent;* of a visiting nurse, or nurses, to supervise the daily life of those afflicted; and, most important of all, the estaablishment of resorts where advanced cases can be cared for, so they will not infect those who dwell with them, and who, when infected, will unconsciously carry the infection to others.

At the Richmond dispensary, it was usually necessary to stop the patients from the work they were doing, or else abandon all hope of obtaining a cure. Suitable work proved most difficult to find, and so the patient had to give up entirely, or else continue a short while longer and then prepare as best he could for the months that intervene before death ends the fight.

If work was relinquished there were no funds with which to pay the rent collector and the grocer; or no wife or mother to cook the food and care for the children.

Naturally most of our patients failed to improve and many were discouraged from atfelt that there was no good in attending at all, felt that there was no good in attending at all, for one goes to a doctor to get cured and not to learn how to protect one's neighbors, and—*die!*

It is but fair to our patients to say that about one-third, while under the nurse's supervision, were quite careful in observing preventive measures; occasionally we found one who was especially careful. Another third were careless, and the rest grossly careless. Most of our patients were irresponsible negroes of the laboring class.

While each of the institutions above advised is important in itself, I consider all three essential to any degree of success. Of course, the expense of such preventive and curative measures is the deterrent factor; yet, from the economical standpoint alone, it would be a profitable investment. Virginia loses $25,000,000 annually from consumption.

Who cannot recall instances in which a young man or woman, on whose up-bringing and education thousands of dollars have been expended, has sickened with consumption and died just at the beginning of the producing period? In other words, thousands of dollars are invested in improving a human being; at the first dividend period the individual sickens of a preventable disease and the investment is wiped out.

It has been intimated that had the individual been a fruit tree or a hog the United States Department of Agricuture would quickly have started vigorous and effective measures to abort the plague; the farmers would have demanded it, but being a mere human being, no one demands it; we all commiserate it!

While I have dealt with this question chiefly from the standpoint of the city, it is no less pertinent to the country districts.

The marked tendency of the negro to migrate to the city is known to all. In its crowded factories, mills and unsanitary dwellings he becomes infected, and as soon as his disease is named, and probably at the advice of his physician, he hies him back to the country where the fear of his malady is usually not so rampant as it is in the city, and *carries his infection with him.* There, without any one to supervise his habits, he soon grows careless, and other members of his family sooner or later succumb, but not until as cooks, washerwomen, nurses, maids, or loafers in the "general store" they have fulfilled their part in the spread of the disease.

In the hope of securing some first-hand views on this subject I wrote to twelve of our leading physicians in different rural sections of the State. Seven replies were received. Four of these seven confirmed my views as to the increase of consumption among the negroes of their neighborhood, but only two had been impressed with any increase among the whites. (Dr. R. M. Slaughter, of Theological Seminary, believes there has been a decrease of tubercular cases in his neighborhood during the past twenty years.) Yet it is only a question of time, considering the constant intercourse between the races, when the increase among both will be noticed, unless stringent preventive measures are adopted. It is a question for each and every community to consider for itself.

As each community has its almshouse from the compelling sense of humanity, so each must have its hospital or home for advanced con-

sumptives. It is they who infect their relatives and friends, and it is these who, in the earlier stages of the disease, unknowingly infect those with whom they labor or associate, or whom they serve.

In closing, I wish to thank Drs. J. S. Haile, of Chatham; H. U. Stephenson, of Toano; J. H. Dunkley, of Saltville; O. C. Wright, of Jarratts; A. C. Fisher, of Midlothian; Sidney Kellam, of Belle Haven, and R. M. Slaughter, of Theological Seminary, for their kind replies to my inquiries regarding the increase of tuberculosis among the whites and the negroes of their respective neighborhoods.

Corner Park and Allen Avenues.

PATHOGNOMONIC SIGNS AS RELATING TO APPENDIX LOCATION.

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It is not my intention to speak or touch upon the typical and characteristic manifestations presenting when appendicitis occurs, for the symptoms of the disease, such as pain, tenderness, muscular rigidity, etc., are too well known to allow for any further elaboration.

More to the point, however, are a number of distinct signs which, if carefully observed and studied, permit a line of reasoning leading in the greatest majority of instances, to a correct opinion as to the location of the appendix; its pathological condition, and, very often, a prognostic outlook of the disease. The importance of these signs carries weight with the general practitioner who meets with the condition in its first stages in-so-far that in conjunction with other symptoms, he may be able to follow the pathological changes more intelligently, and to decide with greater certainty than heretofore when to bring about surgical intervention. To the surgeon, the symptoms are of importance as from their interpretation, he is able to locate and modify his incision, thereby avoiding a prolonged appendicular search at the time of the operation.

The various positions which the normal appendix is able to assume present certain characteristic signs which we can safely classify as being diagnostic of these positions whenever the disease has advanced sufficiently to make these symptoms manifest. These signs are the important exhibitions controlling appendicular topography. They are brought about, not only from pathological changes of the organ itself, but also from the anatomical relation the appendix bears to surrounding adjacent tissue. In other words, they are produced by the pathologico-anatomical alteration taking place, during the progress of the disease.

It has been plainly shown that appendicitis is caused from an infection brought about by bacterial migration and lodgment in the recesses and ridges of the Lieberkuhn crypts with their further invasion into the mucous membrane producing an increase of white blood cells under its epithelium. Depending upon the virulence of bacterial stimulation, these white blood cells or leucocytes increase, and if not checked, involve the various coats of the organ. Upon reaching the serosa, they circularly distribute themselves, so that, microscopically, one is able to distinguish a triangularly shaped mass of white cells with its apex at the origin of infection and its base spreading up to and around the serous coat. This infection may occur singly or be plural, so that from the recesses of the various crypts triangular leucocytosis exists which, at the serosa, merge into one another.

While this leucycytosis has been going on in and between the walls of the appendix, its mucous membrane has also been passing through pathological alterations. The inflammatory reaction following the infection causes its follicles to swell, and an exudate is thrown off. The swollen follicles eventually produce a stenosis which, assisted by the membrane of Gerlach, prevent the exudate from properly draining away. This condition, plus bacterial virulence, lack of proper drainage, and continuous accumulation of exudate, accompanied by increased and increasing leucocytosis is the picture of primary appendix infection. If the bacterial virulence is not controlled or checked the changes continue until the tension upon the walls results in empyema, intra-mural abscess, gangrene or perforation. With complete lumen drainage and abatement of infective activity, the leucocytosis ceases, the tissues go on healing, leaving an intra-appendicular scar. If, on the other hand, the stenosis has prevented a thorough emptying of the lumen the exudate remains, acting as an irritant, and producing the condition of chronic appendicitis, with its regu-

lar attacks, or a continuous annoying dull pain in the right iliac fossa.

As soon as the inflammation has reached the serous coat, it involves the surrounding peritoneum, which now participates in accordance with infective virulence plus pathological progress, spreading to surrounding peritoneal coverings, fascia and muscles, along the mesentery to the retro-peritoneal tissues and causing symptomatic manifestations to arise corresponding to the parts threatened or invaded.

The above described migration of bacteria into the mucous membrane of the organ is known as the entero-genetic form of infection. Kretz, after his examinations, microscopically, has also added to this information the hematogenetic variety. He says, that pathogenetic organisms, especially the streptococci, are carried into the appendicular lymphatics by the blood vessels, lodging themselves in the glands aand forming triangularly shaped leucocyte involvement towards the mucous membrane and towards the serous coat; in other words, emanating from each lymphatic gland, the leucocytes throw themselves out in both directions, continue to spread, as in the enterogenetic type and bring about the same ultimate results.

My object in presenting this pathological picture is not to go into lengthy discussion, or talk of the pathology of the disease, but merely to show that appendicitis is distinctly an infection, plus inflammatory reaction, producing a leucocytosis into and between its muscular layers with lack of proper lumen drainage. It is evident, therefore, that the pathognostic picture will vary, controlled by the virulence of the infection; the degree of inflammatory reaction; the retention or re-establishment of proper lumen drainage, and the extent of peritoneal involvement.

The appendix can lie in different positions, with its distal end or tip pointing in various directions. This is controlled by the anatomical changes in location which may occur to the cecum. For instance, if this portion of the intestinal tract is partially distended with gases, it may reach to the internal edge of the ilio-psoas muscle extending even to the anterior abdominal wall and inguinal region; if it is very much distended, it may reach to the median line of the abdomen, linea alba or symphysis. If the cecum is distended with excrementitious material, its location will be toward and into the true pelvis, its weight holding it in this position. If, on the other hand, the cecum is empty, it will be found to lie high in the iliac fossa covered with small intestines. Then, again, in accordance with peculiar development of the mesentery, it may be turned anteriorly upward, covering the ascending colon.

Following these respective cecal positions, the appendix may lie deeply in the pelvic cavity upon or at the edge of the ilio-psoas muscles along the ilio-pectineal line; outward and anterior, in the iliac fossa; upward and inward under the liver; upward, outward and backward towards the lumbar region, and lastly, towards the median line of the abdomen lying free in the abdominal cavity.

Intra pelvic appendices present characteristic symptoms in accordance with bladder or rectal involvement. There may occur bladder disturbance ranging from frequent micturition to painful urination, with or without colicky bladder—pains sometimes radiating to the urethra. In the female, the adnexa may be affected, causing irritation to the generative organs with a consequent disturbance of their normal functional activity. These symptoms may occur at the onset of the attack, continuing during its entire course, or may terminate at the cessation of virulence and be relieved, forming adhesions with recovery, after exacerbation. If the disease progresses, however, the anterior wall of the rectum may become involved, producing rectal tenesmus and painful defecation. Bladder and rectal symptoms may also make their appearance in the very beginning of an attack so as to entirely mask any direct suspicion toward appendicular lesion.

Edematous saturation of the parietal peritoneum involving the ilio-psoas fascia and muscles, produces an important sign for topographical diagnosis. This sign is brought about through reflex and direct inflammatory irritation, causing muscular rigidity, and is exhibited by the patient complaining of pain when moving the right leg or keeping the thigh continuously flexed upon the abdomen, to bring about muscular relaxation. In the beginning, this symptom may be overlooked, but as the disease progresses, it presents itself in mild degree, gradually assuming the more se-

vere type—that of continuous flexion. It can clinically be shown by flexing and extending the thigh similar to bringing out Kernig's signs for meningitis; and in performing this manipulation, we divide our examination into three stages:

First Stage. A slight movement of flexion and extension of the thigh and leg upon the abdomen.

Second Stage. By bringing the thigh to one-half its fullest degree of flexion, and then extending the leg straight in the bed.

Third Stage. Extreme flexion of the thigh upon the abdomen and then to a right angle similar to Kernig's sign; then extending the leg. If the appendix is located upon or at the edge of the psoas muscles, these manipulations will produce appendicular pain, and one will not fail in forming a conclusion that the appendix is located downward and inward, or pointing toward the inguinal canal. We have also found that if these stages of flexion and extension are carefully studied, one may in the greatest majority of instances, be able to judge the *severity* of the appendicular involvement from the *amount of pain* which patient complains of while the examination is going on.

If the disease is of some days' standing, and the symptom is positive, it is wise to make a rectal or, in the female, a vaginal examination, for even with absent bladder signs, there may be pus in the pelvic cavity, especially, in those positions where the appendix does not point towards the inguinal canal, but abruptly turns downward and dips into the pelvic cavity hanging over the ilio-pectineal brim.

The following case is an illustration:

Charles R., age sixteen, first took sick two days before admission, with pain in abdomen which was general. Night of first day pain localized itself in right iliac fossa; vomiting began immediately, retaining no nourishment. Vomiting has increased, but severe abdominal pain has stopped since last evening. Case seen forty-eight hours after onset of pain.

Previous History. Always had indigestion and stomach ache after eating, with constipation. Four or five months ago had a severe cramp one night which disappeared the next morning after castor oil. At that time, pain caused him to draw up his right leg, and he had sharp, shooting pains down his thigh. He does not remember whether he had pain upon urination. In taking a deep breath, he does not remember whether it caused him any pain. He never had any pain in his back. After the first attack, he always had an uncomfortable feeling in the right side when running or jumping, which would radiate toward his right leg. He still continued to suffer with indigestion. Two days before admission, he suddenly experienced sharp pains in his right side and over the entire abdomen. In the evening, this pain localized itself more in the right side, but at the present time he has no pain. Bowels have not moved in twenty-four hours.

Condition on Admission. Rectal temperature 101.8, pulse 110; respiration 24; leucocyte 30,000. Patient presents a fairly well-nourished body, face flushed with slightly anxious expression.

Inspection. Right leg flexed to second degree, abdomen not distended; bladder symptoms positive, dysuria, and frequent micturition.

Examination. Rectal examination shows tenderness upon deep pressure of anterior rectal wall. No rectal tenesmus or painful defecation. Lumbar symptom negative. Respiratory symptom negative. Abdominal examination shows slight rectus rigidity, no dullness, no tumor. Tenderness over McBurney's moderate; area of most tenderness extending toward right symphysis, becoming more severe as symphysis is approached, and requiring deeper pressure to bring out its fullest degree. Second stage, leg examination causes severe pain. Point of most tenderness, located about an inch and a half above Poupart's ligament in the right inferior ilio-hypo-gastric-angle; tenderness extending deeply downward and inward toward symphysis.

Diagnosis. Appendicitis destructiva, ruptured and adherent to psoas muscles, probably involving intestine, location over ilio-psoas; probably pelvic pus.

Findings at Operation. Incision one and a half inches below McBurney's point towards right inferior ilio-hypo-gastric angle. Appendix located on ilio-pectineal edge, tip hanging into pelvis, ruptured, adherent and pelvis containing pus.

Treatment. Amputation, Mayo's inversion, Lennander drain, closure with silk-worm gut, through and through sutures.

Post-Operative History. Uneventful. Drain

removed fourth day. Balsam Peru treatment in sinus.

Result. Cured sixteen days; discharged.

This case is illustrative of two conditions—first, of ilio-psoas involvement; second, of pelvic encroachment with marked bladder symptoms. Even the history of the first attack designated the appendicular location. The rectal examination, designating pelvic tenderness, assisted in making diagnosis.

As an illustration of the leg symptom existing alone, I cite the following case.

J. B. Z., age 21, six months ago developed sudden pain which located immediately in the right iliac fossa; pain more severe upon raising right leg; vomited all day long, ceasing toward evening; attack lasted about sixteen hours after which he suffered from indigestion but never had any more localized discomfort or distinct attacks. Felt perfectly well until this seven-thirty A. M., when upon arising to go to his business, he felt a sudden pain in his right side and groin. I saw him in consultation at nine o'clock A. M., of the same day and found a normal temperature of 98.2; pulse 80; respiration 20; patient complaining of pain in the right iliac fossa shooting toward his right leg. Examination for tenderness toward lumbar region and lumbar symptom was negative; respiration symptom negative, bladder symptom negative; rectal examination showed no pelvic tenderness. The leg symptom was positive but it required the third stage of flexion to produce very much pain. The pain was of a shooting character when the leg was not flexed. Tenderness over McBurney point was not very pronounced but deep pressure towards the inguinal region caused patient severe pain. Vomiting negative.

Diagnosis:—Appendicitis simplex. Location downward and inward over ilio-psoas muscles. Infection suggested as virulent and operation advised and refused. At 10 P. M. I was again called in consultation. Temperature had now risen to 102.8, pulse 108, respiration 26 and the above symptoms were worse. Patient had vomited two or three times during the evening. Right leg was flexed upon abdomen, extension and flexion at first stage caused severe pain; at second stage still more pain and at third stage produced pains to such extent that patient screamed. Leucocyte count 40,000. Very slight muscular rigidity. No distension of abdomen. Bladder symptom negative. Rectal examination negative.

Diagnosis:—Appendicitis destructiva (intra mural abscess). Not ruptured. Advised immediate operation and allowed.

Findings at Operation:—Appendix turned upward from the cecum then pointing downward, tip resting on the ilio-psoas muscle, highly inflamed and distended but not ruptured, adherent to muscles. Appendix amputated, Mayo inversion. Closed without drainage; layer-sutures; discharged cured on the ninth day.

In the position of upward, outward and backward, the tip directing toward lumbar region, the point of most pain will be located in the back. Particularly is this true and most pronounced in the sub-acute variety or in old standing conditions leading sometimes to hasty diagnossis of lumbago. As a description, I will cite this very interesting history:

Miss C. M., age 32, anæmic appearance, puberty at twelve, always regular. Dysmenorrhea negative. Fell from horse ten years ago, then commenced menstruating irregularly, coming on from two to three months with dysmenorrhea. Uterine adnexa history of no further importance as further examination showed negative. Six years ago, complained of pain in right iliac region, first general, then localized, sudden, severe, never occurred before; four hours after attack began vomiting continuously for twenty-four hours, terminating with nausea lasting about three days, constipation positive. Complained of more pain in back than in abdomen after the first twenty-four hours. Bladder symptom denied. Leg symptom not remembered. Respiration caused sharp pain along side of abdomen and back, mostly in the back and liver edge. History of five subsequent attacks with recovery. Between each attack, patient continuously suffered from constipation and what she terms a "weak back." Expressing it in her own words, she suffered from a continuous abdominal annoyance but not a sharp pain. When standing for any length of time, or with sudden jars, running, or jumping from cars, etc., she would have a severe pain in her back which made her think she was suffering from kidney trouble. On the first day she came under my observation, she had travelled some distance and came directly from the railroad

station to my office. She was exhausted, complaining mostly of severe backache.

Examination:—No untoward condition found upon abdomen from inspection. Tenderness over McBurney's point extending upward and outward for an inch and a half, then backward toward the lumbar region. No tenderness was mapped out below McBurney's point. Leg sign and leg symptom were negative. Vaginal symptom was negative. Coughing causes more severe pain in lumbar region than in abdomen; respiration causes superficial and deep pain along outer portion of liver edge and back. One symptom in the leg manipulation which was noticed and which I forgot to mention was that upon third degree of flexion, patient complained of slight lumbar pain. It made her back sore. Temperature 98.2; pulse 98; respiration 20.

Diagnosis:—Chronic appendicitis. Retrocœcal position, upward and outward, tip towards lumbar region; with adhesions at base involving iliacus and psoas muscles.

Findings at Operation:—Diagnosis verified. wound closed without drainage. Cured seven days, discharged.

I have but recently received a letter from this patient who resides in upper New York State stating that she has entirely recovered and suffers no backache of any kind since her operation.

In these positions whether the organ is located upward, outward and backward or upward and inward under the liver, another sign presents itself due to the respiratory act. On respiration, the liver is forced down upon the intestines by the diaphragm, and in this way an encroachment is brought about upon the appendix causing a sharp pain under the liver; if the organ is diseased and located upward in the lumbar position, however, respiration causes pain to radiate to the back and more to the right. A graduated degree of the respiratory act will be able to show the seat of most pain and in nearly every instance, leads one to the tender area. Further examination will then verify the position.

Having endeavored to show that the leg, bladder, lumbar and respiratory signs act as important factors in locating the position of th appendix, the next question which arises is the much discussed manifestation of pain and its importance as relating to the pathological status as well as the topography of the organ. In accordance with the teachings of Lennander, Wilms, Tavel and others, we have found that pain is produced from inflammatory irritation to the appendicular walls placing them in such degree of contraction as to cause tension upon the meso-appendix and parietal peritoneum. Hence, it is obvious that pain at the onset of the attack is not localized but general until the infection has settled down to further organic involvement. As a rule, this requires about twenty-four hours. In nearly every case which has not within this time, been drained of its exudate, one finds that the condition will be of a progressive nature, localizing itself in a painful area, and instead of subsiding, will go on to further complications. The radiation of pain during the period of this time is important and the first twenty-four hours of an appendicular attack should be spent in careful observation of pulse, temperature, frequent blood counts and for some topographical sign. As the disease progresses, the latter will soon become manifest and it is then safe to assume that the serous coat has become involved.

In the position of the appendix inward and toward the median line, there is, however, an exception, particularly in regard to the localization of pain and one will find in these cases that abdominal pain continues to remain general, rarely localizing itself. Its base may be bound down with adhesions, but its tip lies free in the abdominal cavity stimulating the sympathetic plexus through its influence upon the peritoneum. This variety mostly always causes the fulminating type of the disease, and in every respect is the most serious. The diagnosis of this position must be depended upon by mapping out the area of most tenderness; and one may safely assume with absence of leg, bladder, respiratory and back symptom, but the existence of continued general abdominal pain, concomitantly present with area of superficial or deep location of most tenderness extending inward and toward median line, that the location is intra-abdominal and calls for immediate operation. As an example I cite the following case which came under my observation June 5th, this month. The girl, at present, is in the hospital.

Previous History:—C. R., age fifteen years, negative, no previous attacks. Constipation ever since she can remember. Indigestion negative. Appearance presents a well nourished girl.

History of Illness:—Forty-eight hours be-

fore, began with general abdominal pain. Constipated for three days. Character of pain, a dull ache, and has been getting worse. Castor oil relieved pain for almost three hours. Pain returning, again became general. At this examination, "has pain all over stomach" as she expresses it.

Leg sign and symptom, absent.

Bladder symptom, absent.

Back symptom, absent.

Respiration symptom, absent but coughing causes pain which is general. Area of most tenderness, beginning at McBurney's and turning sharply inward, toward median line two inches below umbilicus, best elicited upon deep pressure. No vomiting or nausea. Abdomen not distended. Rigidity of right rectus, positive. Rectal examination, negative. Temperature 102.8; pulse 102; respiration 28, leucocyte count 50,000.

Diagnosis:—Appendix Destructiva. Location toward median line. Operation, three hours after first visit.

Findings at Operation:—Appendix highly inflamed at base, tip toward abdominal cavity, location median line, base adherent to ileum. Not ruptured. Abdominal cavity contained (cloudy) serous, fluid. Meso appendix short and infiltrated.

Treatment:—Mayo inversion stump drained; still in hospital, this being her tenth day.

Here we have an appendix highly inflamed with formation of abdominal exudate, yet there is no localized pain. The operation proved that haste in operating was well advised as the walls of the appendix were becoming gangrenous.

In locations of the appendix, outward and upward or lying in the iliac fossa, it will be found that pain does not occur as acutely as in other locations. The appendix between the cecum and iliac bone is bound down with adhesions preventing further tension upon the mesentery. The pain, therefore, is moderate until the mass encroaches upon or involves neighboring parts. In these cases one will also find that after the first twenty-four hours, pain is apt to be less severe but as the disease progresses and neighboring parts are involved, it again occurs in an acute form. The topographical diagnosis is easy—a tumur mostly always being felt and the muscular rigidity in nearly every case being more pronounced than in other positions.

The importance of McBurney's point in late years has also lost much of its significance as a fine diagnostic mark in the disease. Its degree of tenderness is never the same and this is easily explained as for instance in a location inward, toward the median line, superficially placed under the abdominal wall. In cases of this kind, we find an equal amount of tenderness extending from base to tip which can beautifully be mapped out, as in the case just mentioned. Then again, with a distal appendicitis, dipping downward over the psoas, one will find very little tenderness over McBurney's point, but as the organ is palpated, it will require more and more tactile pressure to bring out its fullest degree at the tip. In this way, tenderness is an admirable aid in topographical diagnosis as well as forming an opinion as to the extent of inflammation. "Extent of inflammation may be gauged from the degree of pain produced by palpation!"

Any interference with peristalsis will reflexly bring about an interference with this vermicular act and cause symptoms of alimentary disturbance to arise manifesting themselves in either eructation of gases, nausea or vomiting. This interference can only occur when the infection has reached the serous coat and through the inflammation irritating the intestinal coverings to bring about a paresis. Depending upon the degree of toxic stimulation, we may have graded varieties of effect, which in mild cases, lead to eructation, moderate nausea, slight vomiting, or in severe cases, to vomiting persistent and continuous. We have found in our experience, corresponding with that of Spreggel, that the formation of adhesions will check this intestinal irritation. One will observe that appendicitis bound down with adhesions will in the acute attack rarely produce gastric symptoms unless the disease is very progressive and has involved the cecum. On the other hand, one will find that in chronic cases, adhesions act as an interference to peristalsis by binding the parts down. In this way, gastric disturbance manifests itself in the form of indigestion with frequent iliac annoyance from a gas distended gut.

I will conclude by saying that to make a topographical diagnosis of appendicitis, it is essential, first, to take into consideration, the previous history; secondly, the character of pain, whether general or local; third, the presence of gastric disturbance and bowel movement; fourth

the presence of bladder, rectal, leg, lumbar or respiration symptoms; fifth, the degree and direction of tenderness with a careful mapping out of points of most severity; sixth, leucocyte counts, temperature and pulse.

With an observing eye, a keen tactile sense, plus the balance of above mentioned considerations, the topography, pathology and prognosis of appendicitis can in the greatest majority of instances be made.

PELLAGRA—REPORT OF A CASE.

By C. H. SAUNDERS, M. D., Chase City, Va.

A careful perusal of the literature on pellagra brings one to a realization of the chaotic state of the entire subject at the present time.

Lavinder says: (1) Until of late years pellagra was unknown in the United States, and the literature on the subject in English is very meagre and unsatisfactory. The disease is assuming importance at the present time, owing to the number of cases and deaths reported from North Carolina. So far only four cases have been reported in Virginia.

What is pellagra? It is defined by *Appleton's Medical Dictionary* as a chronic endemic disease affecting the lower classes of people in the northern part of Italy and adjacent regions, characterized by a slowly increasing cachexia attended with disturbances of the cutaneous, digestive, and nervous systems. The disease, although its cause is as yet undetermined, has by many been ascribed either to an exclusive diet of maize or to a deletrious substance with which the maize may accidently be combined.

Shoemaker says: (2) Any portion of the skin may be involved, but the parts habitually unprotected from the sun suffer most severely. A number of causes are conceived in its production, as impure water, imperfect ventilation, and insufficient food. The most important factor is the use of diseased maize as food.

Osler says: (3 This is a nutritional disturbance due to the use of altered maize. It has not been observed in this country.

Posey says: (4) The two essential factors in the production of the disease are the habitual use of diseased Indian corn and exposure to sunlight. The diagnostic features of the disease are the combination of gastro-intestinal, nervous, and peculiar cutaneous symptoms in an individual from an endemic locality.

Modern Clinical Medicine says: (5) Due to the ingestion of spoiled maize. Besides a number of dyspeptic difficulties, an erythema presents itself, particularly upon the exposed surfaces of the body and recurs year after year in summer. The patient emaciates, nutrition suffers greatly, nervous symptoms follow. The patient improves in winter, but after suffering for years he succumbs.

Sajous' Cyclopedia says: (6) Contaminated corn meal bread often causes a disease termed pellagra, attributed also to putrefactive changes and the formation of toxins. The early symptoms are mainly gastro-intestinal and cutaneous. Later on marked nervous symptoms appear. Death from marasmus or some complication is apt to occur if the introduction of the toxic principle is continued.

Lavinder says: (7) The pellagra zone is but a small one when compared with the area over which maize is cultivated, yet pellagra does not occur except where maize is grown and extensively used as food by the poorer classes.

The following case has been under my obser-

vation for over a year and I am satisfied it is a case of true pellagra:

J. F. Farmer, colored, age 25, native of

Virginia. Came under my care June, 1908. At that time he was confined to his bed with vertigo, slight diarrhœa, loss of appetite, temperature normal, pulse 48 to the minute. His facial expression was bad. Eruptions on the back of his hands in large red splotches. When asked about the eruption he said that it had been there several years, sometimes better in winter, but came again in summer. Had lived in present place twelve years. Had begun to tire easily about twelve months ago. Under tonics and heart stimulants he was able to resume work in about ten days. I have had him on a regular course of treatment since and his symptoms gradually get worse. The eruption is about the same. His pulse varies from 48, when he suffers with vertigo, to 120, which makes him short winded. He gradually loses flesh and says his appeite keeps poor; suffers with headache. His expression is cachectic, and although able to attend to his business he looks like a very sick man. Eruption has commenced on back of neck.

(1) Pellagra, by Lavinder, 1908.
(2) Shoemaker, Diseases of the Skin, 1897.
(3) Osler, Practice Medicine, 3rd edition, 1899.
(4) Posey, Principles and Practice of Dermatology, 1907.
(5) Modern Clinical Medicine, 1906.
(6) Sajous Cyclopedia, 1908.
(7) Pellagra, by C. H. Lavinder, 1908.

PELLAGRA—A CLINICAL STUDY AND REPORT OF FOURTEEN CASES.*

By WILLIAM FRANCIS DREWRY, M. D., Petersburg, Virginia.

Superintendent Central State Hospital; Ex-President Medical Society of Virginia, etc.

(*Continued from issue of September* 24, 1909.)

Case II.—Sarah C. (6769)—Admitted October 12th, 1908; color black, age thirty-nine, married, had had one child which died; occupation, cook and boarding house keeper; duration of recognized mental symptoms before admission ten days; assigned caause of insanity, "menopause and religious excitement." In addition to the above, one of the physicians, who committed the case, has given us the following additional information: The hygienic condition of the patient's home was good; she was well fed and nourished as far as could be ascertained. The bread she ate was made from apparently sound meal procured from the grocery stores; she seldom ate corn bread, not as often as once a month; had diarrhea alternating with constipation, having diarrhea particularly during the spring and summer months; had periods of fever; some years ago had some eruptive skin disease; and has had periods of mental depression.

On admission to Hospital she was kept for a month or longer under the care of a trained nurse, and daily observation made. She was emaciated, badly nourished, toxic, temperature

Figure 1. Case 1. Pellagrous lesions on face, neck, wrists, hands and feet, reported in last issue.

ninety-seven to normal, pulse seventy to ninety, respiration twenty to twenty-five. Mentally there were confusion, motor restlessness, irritability, clouding consciousness, inattention, disorientation, emotional depression alternating with excitement; disturbance of judgment and reasoning; insomnia was persistent. She constantly wandered about the building, looking for some imaginary enemy whom she said was concealed there. Refused food—had to be tubed. There was after a while slight improvement in her condition. Later, about February, there were added to the above, mutism, indifference, untidiness, profound de-

*Read before the Southside Medical Association, Courtland, Va., September 14, 1909.

pression, marked mental deterioration, along with increasing physical weakness, loss of appetite, diarrhea, etc. Beginning in March and covering the period up to her death, Sept. 6th, examination and observation revealed the following:

General Physical.—Pulse 80 to 112; respiration 20 to 24; temperature varying from 97 to 101 F.—for a while the morning temperature being about 99, the afternoon about 100; blood pressure 112 mm., which is considerably below normal. Slight arterial sclerosis, muscles thin and in-elastic, rigidity being marked; arms flexed and rigid; legs drawn up. Covering a considerable time the muscles of the back and neck were in a like condition, that is, tense, resembling condition observed in cerebro-spinal meningitis. There were progressive loss of weight, emaciation, and general weakness and

Figure 2. Case 2. Pellagrous lesions on face, neck, hands, elbows, feet, etc.

anemia; both inguinal and right epitrochlear glands enlarged. There was dark discoloration on the bulbar conjunctiva; eyelids puffy. From examination made by Dr. D. D. Willcox, of Petersburg, there was no abnormality except contraction of pupils.

Menstruation has been scanty and irregular; leucorrhea; incontinence of urine.

Gastro-Intestinal—Persistent recurring diarrhœa, beginning in spring, sometimes profuse; nausea; variable appetite; excessive thirst.

Mouth.—Salivation, stomatitis, breath offensive odor; gums and buccal mucosa very red; tongue deep red, and besides had on the dorsum near the end, two distinct black spots, three-eighths to five-eighths inches in size. The lower lip drawn down, mouth being open apparently from the stiffness of the muscles of that region.

Skin.—Involving the forehead, chin, lips, sides of face to the lower margin of the inferior maxillary and portions of the sides of the neck, there were pigmentation and the other appearances, including the outlines, observed in Case 1. The gastro-intestinal symptoms preceded the erythema. The face lesions presented a mask-like appearance. The cutaneous lesions on the hands, wrists and feet, particularly over the articulations, were also similar to those in Case 1. In both cases the skin of the palmar surface was dry and harsh. The surface of the hands involved in both cases gave the appearance of being gloved, and the wrists of being incased in cuffs. On the posterior surface of both elbows, the skin lesion was quite distinct—the cracked parchment-like condition being especially observed. Furthermore, the skin over the olecranon, and on the back, just below each scapula, covering a space of several inches, there were brown pigmentation, apparent thickening, and some exfoliation.

Neurological—The nervous symptoms observed were motor paresis; marked and increasing inability to stand or walk, bent forward attitude, falling forward when placed in a chair; vertigo and headache; pain on being moved; more or less anesthesia and analgesia over entire body, particularly over sites of skin involved. Perception of cold diminished; of heat increased.

Psychical.—As the disease progressed there were increased stupidity; depression; almost constant mutism; muttering, sometimes wandering speech; seldom responding to the simplest questions or noticing anything. This case was promptly recognized by Dr. T. F. Jarratt, then one of our assistants, as pellagra. Her symptoms, with some slight remis-

sions, grew graver and graver. She died Sept. 6th, 1909. Brain and spinal cord were sent to Dr. Flexner. Dr. Bardin, assisted by other members of our staff, held a post-mortem.

AUTOPSY.

Case 2.—Age, 40. Sex, female; race, negro; died, September 5, 1909, 7:00 P. M., Post mortem, September 5, 10:00 P. M. (brain and cord). September 6, 1909, 10:15 A. M. (Body cavities).

Anatomical Diagnosis: Malformation of left auricular appendage. Chronic pericarditis; chronic fibrous myocarditis; fatty degeneration of heart muscle; slight cardiac hypertrophy. Chronic pleurisy, both lungs. Bronchopneumonia, lower lobe of both lungs; surface atellectasis, both lungs. Cloudy swelling and pigmentation of liver; cavernous angioma of liver; chronic perihepatitis; congenital absence of gall bladder. Slight dilatation of stomach. Slight enteroptosis. Chronic atrophic enteritis. Acute enteritis with erosions in ileum. Tuberculous ulcers of ileum. Chronic atrophic colitis. Acute colitis with erosions. Tabes mesenterica. Slight chronic pancreatitis. Chronic parenchymatous nephritis. Arteriosclerosis; marked in left coronary.

Body: That of a very emaciated, anemic negro woman, 158 cms. in length. Rigor mortis moderate. Pupils moderately dilated. Left pupil considerably wider than right. Conjunctivæ pale; bulbar conjuntivæ show a brownish discoloration. Abdomen retracted. No edema. Over the forehead, cheeks, lips, chin and sides of neck there was a distinct pigmentation, and thinning of the skin. The facial muscles seemed rigidly contracted, producing a staring expression; the lower lip was drawn back, the mouth open, the upper lip applied to the teeth, producing a sort of *risus sardonicus*. In the eyebrows, over the nose, (particularly on the alæ), the malar regions, the lips and chin there was a great hypertrophy and hypersecretion of the sebaceous glands. The skin in these regions was very thin. Over the dorsum of the hands, the anterior and posterior aspects of the wrists, over both olecranon processes, the area over the vertebral processes of the scapulæ and the angles of the ribs, the malleoli, the inner borders of the feet, and, in patches, over the dorsal surfaces as well, the skin was pigmented, dry, exfoliating, parchment-like and thin. Over both buttocks and the right great trochanter there were extensive bedsores. The inside of the mouth, the gums and the tongue showed reddening and slight ulceration. There were one or two dark patches in the mucous membrane of the tongue, on the dorsal, anterior surface of the right side, near the tip. The subcutaneous fat was practically absent. The muscles were red, but flabby and under-developed.

Abdominal Cavity: The parietal peritoneum rather more dull and opaque than normal. The omentum was adherent by a narrow strand to the left internal abdominal ring. Very little omental fat. The omentum was bound to the small intestine in various places by fine fibrous adhesions. The small intestines were lying principally in the pelvis. The transverse colon was markedly V-shaped, the apex reaching to the brim of the pelvis; the transverse mesocolon very long. The lower edge of the liver was adherent to the mesocolon and the hepatic flexure by a delicate plane of fibrous tissue. The superior and right lateral surfaces of the liver were adherent to the diaphragm by numerous bands of adhesions. The liver was large, extending far up into the thorax. Edge one and one-half cms. below costal margin. The foramen of Winslow could not be entered by the finger. The gall bladder could not be found. Stomach dilated, the fundus being high up against the diaphragm. Spleen further back than normal, and adherent to surrounding organs. Small intestines and colon very small. Appendix normal in size and position. Diaphragm: top of fourth rib on left; fourth i. c. s. on right.

Thoracic Cavity: No free fluid. Lungs normally disposed. Diaphragm comes unusually high up into the cavities. The left lung was adherent to the diaphragm. The right lung was generally adherent by firm fibrous adhesions.

Pericardial Cavity: Contained 20 c. c. of straw colored fluid. Otherwise negative.

Heart: Normally disposed. Seemed rather small. Weight 250 gm. Malformation of left auricular appendage, which was situated at a lower level than normal, and was about half a size larger. The left ventricle was tightly contracted; the right somewhat collapsed. The auricles were distended with blood. The visceral pericardium showed a diffuse thickening and various patches and lines of irregular

thickening. The right auricle was dilated and filled with blood. No thrombi. Chronic fibrous myocarditis. Tricuspid sclerotic but competent. Right ventricle dilated. Walls thinned. Muscles a trifle hypertrophic, cloudy and showed some fatty degeneration. Irregular chronic fibrous myocarditis. Pulmonary segments normal. Base of pulmonary artery normal. Left auricle dilated and filled with blood. No thrombi. Appendage large and in abnormal position. Mitral sclerotic but competent. Left ventricle contracted. Wall slightly thickened. Muscles slightly hypertrophic, cloudy and showed slight fatty degenration. Considerable irregular chronic fibrous myocarditis. Aortic segments slightly sclerotic. Base of aorta showed a diffuse thickening of the intima and minute atheromatous spots. The orifice of the left coronary was one and a half cm. above top of the adjacent aortic cusp. Coronary orifices dilated. Well marked sclerosis of both branches of the left coronary. Lumina patent throughout. Artery tortuous and beaded. Coronary veins filled with blood.

Lungs: The left lung was tightly adherent to the diaphragm by firm fibrous adhesions. The organ showed considerable black pigmentation. Inferior surface red and opaque. Alveoli in upper portions slightly larger than normal. No palpable nodules. Normally crepitant in upper lobe and in upper three-fourths of lower lobe. Lessened crepitation in the lower one-fourth, with almost total absence near the inferior surface. On section, the superior lobe and the upper part of the inferior showed nothing of interest. The lower portion of the lower lobe was congested, moist and showed a few areas of beginning bronchopneumonia. The lowermost portion, next the inferior surface, airless and somewhat fibrous.

The right lung was adherent throughout. It was small, being only three-fourths the size of the normal. The pleura was thick, vascular and quite opaque. The lung showed slightly lessened crepitation throughout. No palpable nodules. On section, the surface was mottled and moist. The alveoli near the pleural surfaces were compressed or collapsed and the fibrous tissue was increased. There was considerable anthracosis. In the posterior portion of the lower lobe there was hypostatic congestion and a few areas of beginning bronchopneumonia. The bronchi and trachea were acutely inflamed; the lumina contained considerable thin, yellowish, mucopurulent secretion. The bronchial lymph glands were small and deeply pigmented. No tuberculous foci discovered in the lungs.

Spleen: The spleen was further back and somewhat higher than normal. It was adherent to the stomach, the kidney and the parietes by firm vascular adhesions. Removed with difficulty. The organ was soft and larger than normal. Weight 190 grammes. The capsule was thickened. The malpighian corpuscles visible and enlarged. Pulp soft, purple and diffluent. Trabeculæ separated and obscured.

Liver: (The liver, stomach and duodenum were removed as one piece, to study the relations of the gall passages). The liver was large and curiously shaped. Weight 1900 gm. The upper portion of the right lobe was distinctly dome-shaped, and extended high up into the thorax. The left lobe was prolonged laterally as a tongue-shaped process which was adherent both to the stomach and the diaphragm. This process reached nearly to the spleen. The anterior edge of the organ was adherent to the mesocolon and the hepatic flexure by a delicate plane of fibrous tissue. The liver was adherent also to the diaphragm laterally, above and behind, and the gall passages were surrounded by fibrous tissue which closed off the foramen of Winslow. The capsule of the liver showed a thickening, opacity and roughening, and several depressed surface scars were noted on the superior aspect. On section the organ was firm and very dark in color. The parenchyma was clouded and congestion was general throughout the lobules. Deep in the substance of the right lobe there was a cavernous angioma, about one and a half cms. long, one cm. wide and one cm. deep. The parenchyma at the superior surface of the tongue-like left lobe was atrophic and the fibrous tissue was increased.

Careful dissection failed to show a trace of the gall bladder. The common duct was isolated near the duodenum and carefully probed. It was then opened and followed up to the liver; at no point was there a trace of the cystic duct. The gall bladder apparently absent. The common and hepatic ducts were larger than normal. They contained nothing abnormal. There was an enlarged gland lying in the gas-

tro-hepatic omentum, close to the gall duct. The common and pancreatic ducts opened normally into the ampulla, which in turn opened normally into the duodneum.

Esophagus: Small injected spots in mucosa close to stomach. Otherwise negative.

Stomach: Dilated slightly. Fundus projected up into the dome of the diaphragm. Anterior surface adherent to the left lobe of the liver. Spleen adherent slightly to the fundus. The serosa rather opaque. The organ contained a small quantity of fluid, mixed with mucous; there were one or two bits of yellow of egg, quite undigested. Odor of contents very sour. The walls were thin; mucosa smooth, having lost a great deal of the usual velvety appearance. Rugæ inconspicuous. There was a marked irregular injection throughout. Several small lard glands noted along greater curvature.

Duodenum: Superior surface bound up in the adhesions in region of gall ducts. Serosa otherwise normal. Walls thin. Valvulæ conniventes flattened. Lumen contained a small quantity of bile in neighborhood of papilla. Mucosa smooth and showed a few irregularly injected spots here and there. Lumen about normal in diameter.

The Mesentery of the jejunum and ileum was elongated, and the gut was located much further down than normal.

Jejunum: Mucosa dull, injected and opaque; tagged with a few fine adhesions from the omentum. One small lacteal cyst noted in upper third. Gut slightly smaller in diameter than normal. Walls slightly thickened. Mucosa covered with semi-fluid, yellowish fecal matter containing undigested food particles. Membrane velvety, valvulæ conniventes well marked. A few injected areas.

Ileum: Serosa dark, injected, opaque. A few fine adhesions to omentum and between contiguous loops. In the lower part, 8 cms. above the ileo-cecal valve, there was a narrow, tight constriction of the gut, on each side of which was a dilated, pouch-like area extending all around the lumen. The serosa over the area was dark, with white mottling. Somewhat further down there was a hard, indurated area palpable opposite mesenteric border. Serosa discolored over the spot. On opening, the walls of the upper portion of the gut were rather thinned; at the site of the constriction, they were markedly thick and fibrous, while immediately above and below they were relatively thin. In the upper portion, the lumen contained a small quantity of semi-fluid, yellowish fecal matter. The mucosa was somewhat thinned and there were many closely placed spots of intense injection. The Peyer's patches were swollen and injected; the mucosa was eroded in many places in the lower part. At the site of the constriction, there was a nodular, ragged, ulcerated condition of the mucosa, extending completely around the gut. There was great thickening of the intestinal walls about the lesion. Above and below for several cms. in each direction the mucosa was dark, with whitish nodules studded all over it. The nodules were about the size of a pea and were not very hard. The process involved the entire thickness of the wall. The lesions were characteristically tuberculous. About three cms. below, there was a deep oval, ragged ulcer present in a Peyer's patch. The edges were overhanging and the base ragged.

The Mesenteric Glands in the neighborhood were greatly enlarged and harder than normal. On section, they showed extensive tuberculosis, and caseation tissue.

The Colon was very small in diameter. The transverse colon was V-shaped, the apex extending to the pelvic brim. Transverse mesocolon very long. The sigmoid very long, and wound far over to the right. The rectum was also further to the right than normal. The walls of the colon were thickened. The mucosa was atrophic throughout, very dark and intensely injected. Several marked erosions noted, particularly in the cecum and ascending colon. The rectum showed considerable injection of the musosa.

The *Appendix* showed a very slight degree of chronic appendicitis.

No parasites were found anywhere in the intestines.

Pancreas: Very hard and firm. Connective tissue somewhat increased.

Left Kidney: Large. Weight 250 gm. The organ felt softer than normal. Very little fat in peri-hepatic tissue. One or two small surface scars noted. Surfaces reddened, with darker red mottling. Capsule strips with difficulty, being adherent in many places. Cortex slightly wider than normal (7-7 1-2 mm.);

glomeruli distinct. Parenchyma cloudy and opaque. Connective tissue increased throughout. Vessels congested. Medulla shows irregular striations and marked increase of connective tissue. Arteries sclerotic.

Right Kidney: Weight 175 gms. A few surface scars. Kidney looks more red than normal. Capsule adherent in various places. Cut surface presents the same picture as that of the left kidney.

Adrenals: Nothing notable.

Ureters and Bladder: Negative.

Uterus: Retroversion. Organ rather small. Hydrosalpinx, left side. Atrophic ovaries. Endometrium shows chronic congestive endometritis in the fundus and above the bend in the canal. Walls more fibrous than normal.

Aorta: Slight general diffuse thickening of the intima, with small patches of atheromatous degeneration throughout.

Aortic Lymph-Glands: Both right and left groups enlarged.

Retroperitoneal Glands: Negative.

Skin:Section of the skin of the wrist showed it to be thinned considerably and atrophic in all the layers. It was dry and leathery. A section in the eyebrow showed a marked hypertrophy of the sebaceous glands, associated with a thinning of the other elements of the skin.

(*Concluded in next issue.*)

PRODUCTION OF IMMUNITY.*

By JOHN W. WINSTON, M. D., Norfolk, Va.

Immunity is relative—never absolute—specific and often handed down by heredity, though its duration varies, which is usually short. The retention and exhaustion theories are of historic value only.

Phagocytosis advanced by Metchinikoff is the destruction of bacteria and their products, chiefly by the leucocytes, but also by the fixed connective tissue cells of the body, endothelium, spleen pulp, and bone marrow cells.

When the bacteria attract the leucocytes it is called "positive chemotaxis," and when they repel "negative chemotaxis."

Besides these, the blood serum contains a group of substances known as anti-bodies which are divided into—

1. Bactericidal substances, some of which are normally present, constituting a natural non-specific defense, known as alexines.

2. Lysogenic substances are agencies in the serum of immunized animals, which disintegrate and dissolve the bacteria toward which they have been immunized.

3. Agglutinating substances which cause bacteria of the specific kind to become immobile and stick together.

4. Antitoxines formed as the result of recent or remote infection, produced in some obscure way from the tissue elements to specifically antagonize the bacterial toxines. The mode of action is unknown, but possibly the two undergo a sort of double chemical combination, which proves inocuous to the tissues. This power of forming them is usually retained. A serum may be highly antitoxic and but feebly bactericidal and *vice versa,* making a toxin-immunity and a germ immunity. Thus we can see that recovery from disease may be brought about by either destroying the invading bacteria, or overcoming the poisons (toxines) produced in the body; and often in disease it is a difficult question to decide, whether to resist the toxine or destroy the germ.

5. There is another class of substances, which are supposed to prepare the bacteria for ingestion by the phagocytes, to which has been given the name of "opsonins"—from the Greek word, opsono, "I prepare for food"—(Sir A. E. Wright). Neither Wright nor any other investigator has been able to isolate opsonins, but their presence in the blood is capable of wide variation. When all the opsonins are used up in preparing the bacteria for ingestion, it is called the negative phase, but when the opsonins are much increased, it is termed the positive phase. An improvement in condition usually marks the positive phase and may be maintained by repeated injections at proper intervals. And right here arises the question whether in a drawn-out disease like tuberculosis, it is not dangerous to allow the negative phase after once having a positive, for the simple reason that germs in their weakened condition, while the positive phase predominates, may be carried out into the circulation by the phagocytes which can handle them in that condition; but when the negative phase predominates, these same germs may become unmanageable.

*Read before the Norfolk County Medical Society, June, 1909.

It has probably for this reason been advised in the use of tuberculin, starting with very small doses, and never letting the negative phase predominate, if possible; and by slowly bringing out the positive phase we make it stronger, and fewer bacteria are handled more effectively by the wandering cells of the body. In other words, it is better to kill slowly if necessary to kill surely.

Insusceptibility to infection may be congenital (racial) or acquired; the acquired is natural by previous attack, or artificial—and the artificial is active or passive.

Active artificial immunity is conferred by inoculation with virulent culture, attenuated cultures, sterilized culture and filtered toxines. Sterilized cultures (vaccines or bacterins) and filtered toxines are what we are now using, with good results, to raise the opsonic index of our patients to overcome or resist disease. This method is slow and when complete is durable. The systemic effect produced may be quick (good), while the local and primal infection may persist. Passive artificial immunity is due to the inoculation with the serum of an immunized animal, and it developes quickly and is transient.

It is often a hard question to decide which is the right method to use, for in some cases one should be used, while in others the other method is just as imperative; and in some cases it may be best to use both methods at once. There is much still to be learned just here on this very interesting point. (1) In a disease like diphtheria, we want something quick in its action to antagonize the poison. (2) In cases of local suppuration, with little systemic trouble, we attack the bacteria *in loco*. (3) In a developed case of tetanus we have aimed to counteract the poison in the system, but do little towards fighting the germ except surgically.

It must be remembered that in passive artificial immunity the body into which the antitoxine is injected has nothing to do with the fight for immunity, as the work has already been done in the body of another animal; while in active artificial immunity nothing whatever has been accomplished until the culture or toxine is injected, and then the body into which it is injected puts up the defense (fight).

Immunity produced in the active way is more durable and more desirable when time allows. That the treatment of infectious diseases, by bacterial vaccines, gives brilliantly successful results, is proven by abundant and increasing clinical evidence, and Wright says that these possibilities have as yet been only very incompletely explored.

It would seem from the reports from different men that the stock vaccines are as good as the autogenous, in most cases, except in streptococcus infections; and here the reason seems to be because of the many different varieties of this germ. It is of the highest importance in all cases to know the form of infection to be handled. There may be more than one kind of infection at the same time; so we must know which is doing the damage, in order to direct our efforts against the right bacteria. Thus, we may have a cystitis with two forms of infection, so that removal of one form won't cure. We may have a post-partum colon infection, with an underlying streptococcus infection in which the latter is doing the harm, though somewhat under cover-protection against the colon does little good and may do harm.

Opsonins remaining, beyond those used to prepare the bacteria for ingestion, accumulate, and upon the amount of accumulation depends the opsonic index of the patient. It at once appears how important it is to have some means of measuring this index, and Wright's is an ingenious method; but for most physicians it is difficult, and those who use it say it is not reliable. Trudeau, in using tuberculin, says that he can tell more by watching carefully the patient than by counting the opsonic index, and that partly because he has gaged his dosage. Some day soon, it is to be hoped, that an easy method will be worked out, for upon counting the index correctly depends the scientific treatment of infection.

Wright compares it to the mariner in a well-known harbor, where all the landmarks are known, for here he can pilot without a compass; but what can he do at sea without something to guide him?

This subject of producing immunity by bacteria is most interesting, and when well mastered may mean that we will be able to control all diseases of infectious nature. What has already been accomplished is a wonderful triumph for science.

504 *Thirty-third street.*

A CASE OF CELIAC PAROTITIS.

By EUGENE LEE CRUTCHFIELD, M. D., Baltimore, Maryland.

Fellow and Gold Medalist, Society of Science, Letters and Art, London; Fellow of the American Academy of Medicine; Lecturer on Medical Terminology in Atlantic Medical College; Late Dispensary Physician (Dermatology, Pediatrics, Gynecology and Obstetrics), St. Joseph's Hospital, Etc.

It is universally recognized and taught that mumps (*parotitis* or *parotiditis*) may, and frequently does, have, as one of its complications and sequelæ, a metastasis in the form of inflammation of the testicles, epididymis, and tunica vaginalis in the male, and of similar annoyances of the mammary glands, ovaries, and labia majora in victims of the opposite sex. This fact is so well known and accepted that to argue it would be an attempt to carry coals to Newcastle. It is also true (but far less frequent) that symptomatic or sympathetic paritiditis sometimes exists. Of this three conditions are recognized in connection with the etiology:

1. In the history of acute fevers—typhus typhoid, pneumonitis, pyemia, etc. This was patent to the older writers, such as Austin Flint, Sr., Thomas Bryant, etc. This form of mumps is usually intense and leads to suppuration. When occurring during a fever it is an unfavorable indication. It may appear during the course of secondary syphilis.

2. Parotitis may manifest itself after traumatism of the abdomen (which term may properly include surgical operations), and disease of one or more abdominal organs. The etiology of this variety of parotiditis is obscure. Its existence was formerly not so well known, but at present its recognition is becoming more diffuse. Osler describes it in his *"Practice."* In the *"Annals of Surgery"* for December, 1904, there is a long and exhaustive article on this subject by Mr. Brennan Dyball, M. B., B. S., F. R. C. S., of Exeter, England. A large portion of Mr. Dyball's paper consists of a review and classification from an etiological standpoint of 101 cases observed by Stephen Paget up to 1887. Between that date and the appearance of Dyball's contribution (1904) about fifty more cases had been recorded by Robinson, Dalche, Dyball, Brewis, Morley, Comby, and Bouchard. To this galaxy of luminaries the writer desires to add his name by a brief narrative of a single case.

3. Sympathetic or symptomatic mumps is observed in connection with facial paralysis.

To the second of these conditions or varieties the writer now calls attention to a succinct report of a case logically belonging in that category. It occurred in my experience in the latter part of January or the early part of February, 1906. The patient was a young woman about 25 years old. She was a patient of Dr. Leonard M. C. Parker, who requested me to perform a *D. and C.* operation. He very skilfully administered the anæsthetic and treated the patient afterwards. Aseptic measures were carried out as fully as circumstances and environments would allow. The operation was done rapidly but without undue haste.

Thus it can be seen that I endeavored to avoid inflammation or any other undesirable sequel from either bacterial or mechanical etiological factors. All progressed well for a week or ten days, at which time parotitis supervened. For this no other cause could be assigned than that it was of cœliac origin. It disappeared under the employment of anti phlogistic remedies. The writer regrets that he kept no record of the case and that his memory fails him as to which side was affected or whether or not both glands were subsequently involved, etc.. Omission of such detail detracts from the value of a report. It must be remembered, however, that this was a patient of another physician, with whose consent the case is reported.

The outlines of this case have been given largely to demonstrate that such cases do sometimes occur.

Speculative theories as to the connection between the parotid gland and the abdominal organs are relegated to those whose lives are consecrated to careful investigation and painstaking research. This mite is contributed to the mass of material from which they start their toils.

It may appear strange to report but a single case, but the writer deliberately commits this anomalous crime, believing that if others would do the same something of interest and value to the science of medicine and surgery would occasionally be made known. It would certainly afford us a far more definite idea of

the aggregate number of cases of certain maladies than we now possess. This knowledge would enable the statistician to gain more accurate views concerning the relative frequency of particular symptoms, the greater or less relative occurrences in the two sexes, at different ages, in different vocations, among different races, and in the social states of matrimony and celibacy. The knowledge of these points must necessarily assist the practitioner in judging the relative importance of features concerning which his views are now indefinite and hazy. He would thus be guided to some extent in regard to the size of the doses to be prescribed. Having learned what symptoms denoted gravity and what were not so urgent, it follows that his judgment would be assisted materially. It would, moreover, be of service in his conclusions as to the prognosis, and thus place him in a better light with the family, since he would answer their questions along this line with greater assurance. It might be a means of rendering important service to the patient and the family. The former, being instructed as to the gravity and urgency of the case or of certain symptoms, might be induced thereby to make preparations of serious moment as to his own welfare and also that of loved ones.

This chain of reasoning clearly shows that, after all, it is not so insignificant a matter to report merely one case of a rather unusual character. The writer modestly records this one case in the hope that if in the future all the facts relative to it could be known, humanity would be benefited.

ADDRESS OF THE PRESIDENT OF MEDICAL SOCIETY OF VIRGINIA.*

By STUART McGUIRE, M. D., Richmond, Va.

Members of the Medical Society of Virginia, Ladies and Gentlemen:

A year ago, when I was elected president of this society, I endeavored to express my appreciation of the great honor which had been conferred upon me. I said that when I was a small boy I remembered my mother telling me it was possible some day I might be President of the United States, but even at the time I did not regard the prospect seriously. I remembered later my father telling me if I lived long enough and worked hard enough, he hoped some day I might be President of the Medical Society of Virginia, and since that hour the honor has been the goal of my professional ambition. It has come to me, however, sooner than I deserved it, and I can honestly say sooner than I wished it. I believe it would have been better for me and better for the society if it had been postponed some years. As it is, I have now attained at a comparatively early period of life what I regard as the highest honor within the gift of my professional brethren.

While willing and anxious to discharge the duties of my office, I have found but little to do in the past year. The work of my predecessors has been so thorough, and the organization effected so satisfactory, that the society has run like a well-oiled piece of machinery. Owing to the efforts of my distinguished predecessor, Dr. William F. Drewry, and his associates, we have a Constitution and By-Laws which, with slight modifications, are well adapted to the present, and give room for unlimited expansion in the future.

Owing to the work of our Secretary we now have over 1,500 names on our roll, and can rightly claim the distinction of leading every State in the Union in the proportion of the number of our members to the number of physicians within our territory. This is not an empty honor or idle boast, for the uniform allegiance of the profession in Virginia to the State organization gives us a power and dignity unequaled by any similar medical association in this country. It enables us to regulate the conduct of our individual members and to exert great influence for good in public affairs throughout the Commonwealth. It is needless, I hope, to remind this audience that the success of the Medical Society of Virginia is largely due to the work of one man, who, in season and out of season, for a period of thirty-nine years, has given freely of his time, and frequently of his resources, to advance its interests. Only those who have been closely associated with him know the thought and energy he has devoted to its affairs, the industry and enthusiasm he has displayed in his work,and the pleasure and personal pride he has felt in the results. Some of his colleagues may have achieved wider professional distinction; may have received

*Delivered before the fortieth annual session of Medical Society of Virginia, at Roanoke, Va., October 5, 1909.

greater pecuniary compensation, but he has accomplished the unusual task of successfully maintaining a recognized medical society on a high ethical and scientific plane, which is a service to the public and the profession well worthy of a man's life's efforts. In my opinion no doctor in Virginia is more beloved for his personal characteristics, or admired for the good he has done, than Dr. Landon B. Edwards.

While it is true some members of the profession do not appreciate the advantages to be derived from regular attendance and efficient co-operation in medical organizations, it is a fact that at meetings such as this the busy and successful practitioners are invariably to be found. It is reasonable to suppose that the duties and responsibilities they leave at home are heavier, and that the value of the time they lose from work is greater than would be the case with their less successful colleagues who are often absent. This condition can only be explained by the fact that it pays to attend meetings such as this. It pays a man to help make the session of a medical society a success, because of the influence the meeting exerts on the community in which it is held, educating and stimulating the local profession and advertising to the laity that medicine is not bound by dicta or dogmas, but is a progressive science, ready to discard the old if proven to be fallacious, and to adopt the new if found to be of value. It pays a man to write a paper for a society, because, in its preparation, he has to study and familiarize himself with the subject, and thus becomes a better doctor. It pays him to read a paper before a medical society because it gives him a legitimate opportunity to show his capacity, thus increasing his reputation; or of presenting new and original views as to the treatment of disease, thus adding to the knowledge of the profession. It pays a man to listen to the papers read by others at a society because in no other way can he, in the same length of time, get so much knowledge with so little labor. The discussions which follow these papers are especially profitable. In them is an impressive personal element which is totally lost in the stenographic report published in the Transactions. In addition to the educational and professional advantages derived from attendance upon these meetings, there are equally important social and personal benefits. The occasion is a holiday, a recreation, a vacation. It breaks the monotony of life and enables a man to do better work when he returns home. It offers opportunity to meet men who are doing the same kind of work in different sections of the country, and results in pleasant and profitable acquaintances, which often lead to permanent friendship. And last, but not least, it brings together men who live in the same community, but who, owing to petty jealousies or lack of time for social intercourse, see little of each other. Either in the session of the society or in the committee room, or on the journey to and from the place of meeting, they are thrown into an intimate contact, which frequently leads to explanation of misunderstandings, adjustment of differences, appreciation of good qualities, and to the establishment of the most friendly and cordial relations. Dr. Osler summarizes the subject with characteristic incisiveness when he said:

"The man who knows it all and gets nothing from the medical society, reminds me of that little dried-up miniature of humanity, the prematurely senile infant, whose tabetic marasmus has added old age to infancy. 'It is a waste of time,' he says, 'and he feels better at home,' and perhaps that is the best place for the man who has reached this stage of intellectual stagnation."

The Medical Society of Virginia has attained its fullest success *numerically*. Its new Constitution and By-Laws, while not yet perfected, will soon put it in a satisfactory state *politically*. The steady infusion of new members, educated along modern lines, will shortly make it the equal of any similar organization *scientifically*. The fact that it is composed of Virginians is a guarantee that it will never suffer by comparison with others *socially*. Our weakness is lack of business methods, which has kept us crippled *financially*. I earnestly advocate the increase of our annual dues from two dollars to five dollars. This would make very little difference to the individual members, but it would make a great difference in the financial resources of the society. It may be argued that it might cause a temporary decrease in the number of our members, but if this resulted the loss would shortly be regained, when it was seen to what effective use the money could be put. It would make possible a supervision over medical education, a co-

operation in the work of the State Board of Examiners, a participation in the prosecution of quacks and charlatans, and an activity in various other directions where our influence is needed. It would provide funds for the work delegated by the society to the Legislative Committee, and thus make its work effectual. It would enable the society to offer rewards for research work which would reflect credit upon the profession and benefit to the people. Finally, it would put us in a position to establish permanent headquarters. There is no question of the desirability of the society having a home office for the transaction of official business, the preservation of records, the collection of books, and the formation of a museum. It should also have a fixed time and place for its annual meeting. Heretofore, the date of the next meeting has been decided at the last moment by the officers of the association, and varied to avoid conflict with political elections, agricultural fairs, horse shows and other similar events. If we had a fixed time, the date of other State meetings would be arranged with reference to us, and we could make our plans ahead and arrange our work so as to be able to attend.

In the past it has been our custom to meet in different sections of the State. This policy was originally adopted for several reasons: First, in order to distribute the cost of entertaining the society among the different cities of the State, but this reason no longer exists, because the society, by resolution, has requested the local profession of the town in which it meets to provide no public function. Second in order to equalize the distance traveled by attending members during a period of years, by holding the meetings in rotation—north, east, south, and west. Modern travel, however, is so rapid, so cheap, and so comfortable that when once a man leaves home, a hundred miles more or less is immaterial to him. The third reason was a desire to create interest in the society and add to its membership in the territory in which the meeting was held; but the number of our members is now so great, and the work of the society so well known that this has ceased to be necessary.

The time has come when we should have a permanent place of meeting. The society has grown so large that there are really but two cities in the State which afford sufficient hotel accommodations and suitable assembly rooms and exhibit halls for its annual session. These cities are Richmond and Norfolk. If necessary, we might divide our meetings between the two, but this would be a political compromise, and logically, one or the other should be selected. Personally, I favor Richmond, although I recognize the inducements that would be offered by Norfolk. Richmond is the largest city in the State, near its geographical center, and easily reached from every section. Being the capital, it is the center of political life, and owing to the location of its two medical schools, its numerous hospitals, and the office of the State Board of Health, it is recognized as the principal seat of medical interests. It has adequate hotel accommodations, varied in character to suit both those wishing modest quarters and those desiring luxurious apartments. It has numerous auditoriums, readily accessible by street car service; and, finally, it is a point where so many members have business and social interests that many would attend the annual session for the triple purpose of participating in the meeting, transacting private business, and meeting friends and relations.

The Richmond Academy of Medicine, composed of over 150 members, nearly all affiliated with the State organization, is now planning the establishment of a permanent home, with an assembly hall, library, museum, and other attractive features. If permitted to do so, I am sure it would co-operate with the State Society, give it space for its business offices, care for its library, and cordially welcome its members when they visited the city during the period between sessions. If requested, it would elect a permanent committee to arrange for each annual session, provide places of meeting for the general body, as well as the Executive Council, and provide clinics at the colleges and hospitals as an important feature of the program. Such a committee would soon gain an experience which would enable it to manage matters more smoothly and effectively than is possible by any committee appointed for but one year.

While I do not wish to press the changes suggested at this time, I hope to live to see them put into effective operation.

We will now take up the real work of the society. We will first hear the report of

various committees, and then hear and discuss the papers on the printed program. I wish to remind the members of the society that, according to the By-Laws, all motions and resolutions are referred to the Executive Council without debate; also, that not more than twenty minutes shall be occupied in reading any paper, although it may be published in full in the Transactions; and, finally, that in any discussion no member shall speak longer than five minutes or more than twice on the same subject. These rules will be rigidly enforced, and it is earnestly requested that no exception be asked in any instance. I will also state that, while special arrangements will be made to allow papers to be read by our invited guests at a time convenient to them, that so far as regular members of the society are concerned, the program will be followed as printed, and if the author is not present when his paper is called, his paper will be relegated to the end of the list.

Book Notices.

Tuberculosis—A Treatise by American Authors. Edited by ARNOLD C. KLEBS, M. D. With 3 colored plates and 243 illustrations in text. New York and London. D. Appleton & Co. 1909. 8vo. 939 pages. Cloth $6.

This is a complete modern work on tuberculosis, with well selected authors for each of its several subdivisions on its etiology, pathology, frequency, semeiology, diagnosis, prognosis, prevention, treatment, etc. The bulk of literature on the subject that has been examined by these eighteen authors may be imagined when the reader is informed that there were over 3,000 publications on tuberculosis during the one year 1908 alone, all of which were examined with more or less care. Moreover, the special opportunities of each author to add something of his own personally acquired knowledge makes this book complete in every essential detail. Several appendices are added, containing matters of even more recent date than when the authors wrote their papers. The conclusions of the whole work are, in substance, that tuberculosis is preventable; that, if recognized in early stage, it is almost always curable, and full details are given as to measures to be adopted, both in prophylaxis and treatment. This is perhaps the most valuable, practical book on the subject that is fully up to date. Perhaps space might have been saved by omission of the over forty pages of bibliography. The 35 double column pages of Index, and the 14 pages of Contents render reference to a given matter discussed in the volume relatively easy.

American Practice of Surgery. Editors: JOSEPH D. BRYANT, M. D., LL. D. and ALBERT H. BUCK, M. D., of New York City. Complete in Eight Volumes. Profusely Illustrated. Vol. VI. New York. William Wood & Co. 1909. Large 8vo. 916 pages. Extra muslin, $7; brown leather, $8; extra half lavant Morocco, $9.

This Volume VI. of a "complete system of the science and art of surgery by representative surgeons of the United States and Canada" treats of prosthesis in its relations to surgery of the face, mouth, jaws, nasal and lachrymal glands; of surgical diseases and wounds of the nasal cavities and accessory sinuses; of the mouth, tongue and accessory organs; of the neck; of the thyroid and thymus; of the female breast; of the external genitals and vagina of the female; of the male genital organs; surgery of the thorax and spinal column; chancroid; gonorrheal urethritis, and surgical diseases and wounds of the jaws. Treatment of infectious peritonitis, and appendicitis will appear in Volume VII. This *system* is very generally regarded as the best and most complete one on surgery published. The paper, print of text, illustrations, etc., are all excellent. Each of the authors for each of the volumes has been specially chosen because of his special qualifications to prepare his part. The first volume of this *system* was issued during the latter part of 1906.

Human Physiology. By JOHN W. RITCHIE, Professor of Biology, College of William and Mary, Va. Illustrated by MARY H. WELLMAN, Yonkers-on-Hudson, N. Y. World Book Co. 1909. Cloth. 12mo. 362 pages. List price, 80 cents; by mail 96 cents.

This is " an *elementary* text-book of anatomy, physiology and hygiene," intended for public and private schools of grades high enough for pupils to read and study intelligently. It is a book that *should* be adopted in all such schools and academies. It gives accurate information in simple, comprehensible terms, and if adopt-

ed in the schools of the different States, it would prove interesting to the pupil, and afford him more profitable knowledge than the study of the dead languages, abstruse mathematics, etc. unless he proposes to make a specialty in after life of such branches. The teachings of this book would lead to a sound body for a sound mind.

Editorial.

Programs of State Medical Societies.

It has been the custom of many societies, in issuing their programs, simply to state the names of the authors and the titles of their proposed papers. If authors confined their papers to the subjects announced by them it might, at least, allow those to be in attendance an opportunity to study up the same subjects in advance, and thus be prepared to discuss some feature of the announced title. But as the speaker rises on the floor, often he begins by a statement that he has changed his subject since announced in the program. This is not as it should be.

In looking over the programs of many societies during the past year, we have been specially interested in that of the Pennsylvania State Medical Society for 1909. Not only does the author have to announce the title of his paper, but has to prepare in advance a synopsis of from five or six to ten or a dozen lines of his paper, which synopsis is published in the official program before the meeting of the association. Unless he does this, or if he changes his subject after the program is prepared for publication, his time is relegated to the very last hours of the session.

In many of the State Society programs, an author gives the title of a proposed paper; but when his time comes to read, it is found that the subject is altogether different from that announced. The ruling of the Pennsylvania Association in this matter is an excellent one, and worthy of adoption by other States. It not infrequently occurs that a writer announces the title of a paper in the program just to see his name in print—without even putting pen to paper in preparation. This also is wrong. It should be insisted on that each author of announced paper should prepare a few lines of synopsis, so that others may prepare themselves in advance to discuss the subject.

A National Conference on Pellagra

Will be held in Columbia, S. C., November 3-4, 1909, under the auspices of the South Carolina State Board of Health. As this disease has already manifested itself in seventeen States, and seems to be assuming the proportions of a national public health problem, physicians and sanitarians, generally, are cordially invited to unite with the conference in a study of the disease.

In addition to addresses, papers, and discussions, a number of clinical cases will be presented, and an excellent opportunity for a study of pellagra will thus be afforded. For further information address Dr. C. F. Williams, Secretary of State Board of Health, Columbia, S. C.

The Elizabeth City County Medical Society,

At its annual meeting, late in September, elected the following as officers for the coming year: Dr. J. Wilton Hope, president; Dr. W. H. Howard vice-president, and Dr. Harry D. Howe, secretary-treasurer. A paper entitled "Some Causes of Death" was read by Major John A. Johnson, Chief Surgeon of the National Soldiers' Home.

Medical Society of Virginia.

As the fortieth annual session of this State Society is in progress as we go to press, we will have to defer any notice of it until our next issue.

Messrs. Battle & Co.,

Of St. Louis, Mo., have issued No. 10 of the series of Dislocation Charts. Upon request of physicians all back numbers will be sent free of charge.

For Sale—$3,000 cash practice, in a railroad village. Nice house, all necessary outbuildings, and conveniences, good roads, fine country with churches, schools, etc. No opposition. Address "W.," care *Virginia Medical Semi-Monthly.*

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Original Communications.

THE INFLUENCE OF FACTORY INSPECTORS UPON PUBLIC HEALTH.*

By HAROLD B. WOOD, M. D., Philadelphia, Penn.

In several of the States there is a centralized bureau whose several inspectors are deputized to visit various industrial establishments throughout the State for the purpose of enforcing well defined laws. That these laws are frequently inadequate and that the work accomplished is in proportion to the slight importance assigned to it by the public are common knowledge. Public attention should be called to the magnificent opportunities and to the great vital benefit which could result from the labors of those to whom the work may be entrusted. Too much attention has been paid to the direct economic industrial problems without sufficient to the conditions effecting health. Although the latter are really economic problems the former produce financial gain more directly and more rapidly.

Even before the activity of the public press and of certain charitable organizations accomplished the adoption of our lately revised child labor law it was the public concensus that the prevention of child labor was the foremost and only duty of the factory inspectors. The State factory departments in endeavoring to oblige the public and meet their demands have accepted this dictum that the prevention of minor employment is the predominant note in their statutes. The chief of Pennsylvania's department has declared as much. In Delaware the report of 1902 relates to the number of females and children employees only. With excellent sanitary statuatory regulations the report of Illinois relates to children only, not informing the public of the legal enforcement of dust protectors and disposal of infectious goods. In New Jersey the law (1904) provides only for the protection of child labor and the installation of fire escapes. From a perusal of several reports it appears that the chiefs of several bureaus consider this protection of child labor to be the paramount question. The New York Commissioner of Labor, however, declares, "The direction of guards for machinery is the most important duty of the factory inspectors."

The Pennsylvania factory law (1904) explicitly creates the inspectors as a sanitary force. They are empowered to abate nuisances, to ensure cleanliness, to check dust, to prevent accidents, to install ventilation, to enforce sanitation, to overcome contagion, to "protect life and limbs." Hence they are sanitarians, and in the relative importance of their various labors they should be sanitarians rather than sociologists, which the general public expects them to be, rather than engineers, as many physicians believe their function. Statisticians they must necessarily be if the results of their labors are to be known.

A revisal of the contents of the statistical tables as published by the factory department would produce reports of more value to the public, to whom they belong. To determine the number of male and female factory help may be of sociological importance, but it uses valuable time of the inspectors and is of little, if any, value from a public health standpoint. If it must be done other means than those usually employed should be adopted that the time required may be used to better advantage. It belongs strictly in the National census only. "Orders issued for better sanitation" is a meaningless expression used in various State reports. Rarely, if ever, is it mentioned if the orders refer to sweeping the floor or disinfecting a room, whether protecting dress goods or foodstuffs from street dust or from flies and contagiously diseased people. "Orders issued for machinery guards" gives little information of the exact damage done by the faulty ma-

*Read before the Pennsylvania State Medical Society, September 28, 1909.

chinery, or if the cogs without any assistance from careless employees could, or did, mutilate; or if the dust could, or actually did, induce tuberculosis in that particular mill. Accidents reported are on the increase, but the public not being informed of the actual influence exerted by guards, many doubt the utility of protectors. In the credible Indiana reports the loss from accidents is indicated in a table showing the loss of wages (averaging $12.80), days lost (average 10), wages paid during disability, fraternal benefits (average $8.55), and the medical and burial expenses of the fatal cases (average $227 in 1905).

The legal abridgements in our factory inspection laws need filling. In Pennsylvania, outside cities of the first and second class, a man may conduct his factory in any manner he sees convenient, provided his employees do not number ten; if his help is of his own family, being not actually legally employed, he is not now held accountable for their health or safety or for the condition of their products. Jurisdiction should be extended over all factory toilets and not only over those situated within the building. When a factory first begins operations the inspectors have no definite way of learning of that fact, and before they are able to locate the factory illegal and harmful activities may have been conducted for years.

In New York the factory inspectors, appointed from lay life, are entrusted to diagnose infectious diseases. "If the factory inspector finds that infectious or contagious diseases exist in a workshop, room or apartment of a tenement, dwelling house or of a building in the rear thereof, * * * he shall report to the local Board of Health. Such boards may condemn and destroy all such infected article or articles." (Laws N. Y., 1899, Chap. 191.) An affiliation between the two bureaus is apparent. In Maine, Illinois, and Massachusetts various reports are substituted to the boards of health, yet in Pennsylvania this helpful official connection with the central and local board has been woefully neglected. When it is possible for one bureau to assist another it should be done, that the work of either may be more efficient. Prior to May, 1905, the Philadelphia Bureau of Health sent daily reports to the factory inspectors of the addresses of recently reported cases of contagious diseases. The inspectors consulted the lists to locate the prevalence of the cases in sweatshops and factories where a danger of transmission would be apt to occur. The Illinois inspectors are ordered to examine goods for vermin, a valuable procedure in view of the dangers of insect transmission, as Dutton proves typhoid to have been transmitted by bed bugs.

In Pennsylvania in three years (1905-7), with an average of 13,000 establishments inspected annually, there were 2,274 guards ordered for machinery, 1,157 orders issued for better sanitation, and 643 toilets ordered erected or repaired. In 1907 there were 151 children dismissed for being under age, 15 for illiteracy, and 987 for want of employment affidavits.

The question of child labor is not only one of the effects upon education, but one of discipline, morals, and health. In minor employment, as a result of confinement, Roberts noted a preponderance of deformities and predisposition to disease. In the Massachusetts inspections in 1907 many minors were noticeably anæmic, emaciated, and showed damaging effects from unhygenic surroundings.

The actual benefit derived from a child-labor law is a moot question. To say that a poor, but intelligent, capable, industrious child of 13 shall not work, and to prevent a shiftless, irresponsible child from gaining an education in discipline are two unfortunate results that inevitably occur with the present wording of the various States' laws. Many points of Pennsylvania's new law are excellent, but there has been set an unfair standard which is extremely hard to adjust. Probably exceedingly few of the few children who are excluded from factories on account of being below the legal age ever reach a school room. They are prevented from obtaining a good education in punctuality, obedience, discipline, and commercialism and are permitted to wile away their time or seek employment in less responsible positions over which the inspectors have no jurisdiction. The morality of the discharged child probably suffers because his new surroundings are apt to be worse than the first. Every child should be compelled to attend school until of a certain age unless he obtains from the school teacher or principal a certificate showing he is mentally, physically, and morally capable of going to

the work which family conditions warrant. The standards determining certification would have to be founded upon local conditions, taking cognizance of the nationality, family assistance needed, and kind of work to be obtained.

The inspection and control of sweat-shops and food stores would be made more efficient if the factory inspectors were given the locations of employment of those who have in themselves or in their families cases of diseases which are transmissable through such avenues.

Factory inspection has some influence over the branch of preventive surgery which relates to accidents. All serious accidents are required to be reported by the foreman or owner of the mill to the inspectors. In this State from 1904 to 1907 there were reported 439 fatal and 2,873 non-fatal accidents over which the department had jurisdiction. To prevent undue accidents the inspectors are empowered to order machinery guards where apparently needed. It is claimed that in woodwork mills with guards for saws and other machinery the men become more careless and thoughtless, more accidents thereby resulting.

Although not the duty of the inspectors to determine the liability for accidents, such is usually not difficult. It can truly be said that the great majority of accidents in well managed establishments are due to the thoughtlessness, the carelessness, recklessness, and ignorance on the part of the operatives. Lack of attention to business, hurry to finish a job without attention to details, utter disregard of all orders, and ignorance of the movements of machinery, have cost many a limb and many a life. When, however, it can be shown that the accident resulted because of insufficient light, overcrowding of machinery, exhaustion of men from over-work, improper operation or construction of machinery, then the employer should be held distinctly liable. The employee legally assumes the inherent risk of employment, but the employer should realize that a protection of his men is a protection of his business and products.

The employers should realize that their employees are not of the same intellectual caliber and that certain employees possess an inaptitude because of faulty inheritance or education, and, therefore, must receive more attention and protection. In some cases accidents could be averted by posting notices in the mills penalizing those injured or those seen to be careless or reckless. The ignorant, inefficient, and irresponsible person being put in positions requiring judgment and quick decisions, becomes a direct cause of accidents. Over the determination of responsibility or capability the inspectors have had no control. Accidents will continue to result while the greed of the employer and the carelessness of the employee assert themselves.

Ventilation has been carefully introduced into the factory laws; but that provided in law is of little consequence. Provision for 250 cubic feet of air space for each workman permits the employees to be stationed within five feet of each other in the ordinary work room. The interchange of air left to the discretion of the inspector is apt to be but a temporary raising of windows for a few days only after the inspector's visit.

The supervision and correction of damage upon health caused by noxious fumes, insufficient light, extremes of heat and excessive dampness, are all included in the jurisdiction of some factory laws, especially in Massachusetts.

The more important duty of the factory inspectors, legalized at the present time, is the elimination of dust. With a greater diffusion of knowledge and more extensive enforcement of the use of blowers, exhaust fans, hoods, respirators, and wet processes, the mortality from tuberculosis will show a marked reduction. Eighteen States have statutory provisions requiring these mechanical devices. It is cheaper to prevent tuberculosis than to take care of its victims.

Although Harrington declared that vegetable dusts were commonly regarded as the most irritating, the highest tuberculosis mortality rates are caused by the hardest and most sharp-angled dusts. Steel dust does more damage than brass dust, glass than granite, granite than marble, horn than bone, flax than cotton, cotton than wood. Perlen shows that of 4,177 who died from tuberculosis 30 per cent. were exposed to metallic dust, 26 per cent. of vegetable, 18 per cent. of mineral. Of the deaths of cutlery grinders at Northampton 54 per cent. were due to tuberculosis. The same disease was the cause of 41.4 per cent. of 343 deaths among the Quincy stonecutters. The statement

in the United States Bureau of Labor Bulletin 79 that 49.2 per cent. of the grinders die of tuberculosis is but more proof that more vigorous activity is needed to protect the workmen. In the Prudential returns (1897-1905) it is shown that of 117 steel grinders 52.1 per cent. die of consumption, of 255 metal polishers 40.4 per cent., of 736 stone workers 36.7 per cent., of 1,349 cigarmakers 29.8 per cent. These 837 died because they were not properly protected from the dusts of their industries.

One difficulty in preventing accidents and disease is to induce employees to wear respirators or goggles, or to work behind hoods or guards. In spite of the law and recommendations employees refuse to use them. The lack of proper hygienic education being given in the public schools is largely responsible for the workmen being unable to appreciate reasons for saving themselves. Many employees blame the foremen for slight colds caused by drafts, but do not object to headaches or worse conditions arising from working in vitiated air. The prevention of promiscuous spitting comes under the jurisdiction of factory inspectors.

The inspectors are empowered to enforce sanitary conditions in bakeshops, but have no jurisdiction over those other food houses where dirt, carelessness, and ignorance entail infinitely more damage—dairies and creameries. Inspectors have recently told me that the bakeries in their precincts were usually particularly free from objection, there being an entire absence of spitting on the floor. Knowing nothing of the presence or absence of tuberculosis in bakeries, nor legally realizing that a cough over a loaf of bread is apt to be of much greater moment than expectoration on the floor, and not having the ability to diagnose diseases they cannot rightfully give a clean bill of health. Although just as dangerous as others, bakeries in which no outside help is employed are not within the jurisdiction of the inspectors.

We would not minimize the value of bakery inspection, for legal supervision over all producers and handlers of food products is desirable. The great number of epidemics traced to milk supplies and the influence milk has upon infant mortality, compared with the insignificant part played by breadstuffs upon public health clearly demonstrate the great preponderance of the value of dairy inspection. The writer has been unable to learn of a single instance of sickness specifically traced to breadstuffs, except the rare cases resulting from chrome yellow, egg "spots," "musty" bread, or occasional slight gastric disturbance from pies or hot bread. If the State cannot furnish both bakery and dairy inspection, by all means the dairies should receive the supervision. True, the State Sanitary Live Stock Board of Pennsylvania has been carrying on some local activities in the dairies, but there never has been the concerted work which the importance demands.

Water pollution, of great importance, has rarely been touched upon by any factory inspectors. The various State laws require that sufficient privies shall be provided by the factories, but the writer was unable to find any mention being made of any special location to be provided or of any disposal to be made of the contents. It may be of value to know the number of children employed in a mill, but to know where those employees are compelled to deposit their dejecta is of infinitely greater value. An elimination of the factory privies which discharge directly or indirectly into water courses would undoubtedly be of marked benefit in stamping out transmissible diseases. The position and discharge of all rural factory privies should be reported to the health authorities by those who have the opportunity of determining their location, the factory inspectors. Upon informing a factory superintendent of my inspection of his sanitary conditions he remarked with assurance, "We have no cesspools or anything like that," to which I answered, "No, but you have two privies which hang over that creek; which is much worse."

The inspector's duty of providing sanitary toilet facilities are limited by the walls of the factory. If the toilet rooms are to be situated within the factory, the inspector determines the location, for which he considers only the plumbing and ventilation. If municipal sewerage is convenient, connection therewith is ordered. But if the toilet is to be located without the factory walls and in the absence of true sewerage the power of the inspector ends. He has no official power or opportunity to recommend or order the location of the toilet or to decide as to the proper disposal of their wastes.

These should come within his jurisdiction if he is to remain a sanitarian. He being rarely if ever consulted as to which is the least objectionable—well, cesspool or privies situated over water courses—the last is usually adopted as less labor is used in the construction. The inconvenience from lack of sufficient numbers of toilets or of ventilation is as nothing compared with the possible infectivity of flies or the contamination of water supplies. Yet the inspectors, who scrutinize the former, have no interest or jurisdiction over the real dangers derived from factory toilets.

More provision should be made to provide, as do Massachusetts and Rhode Island, for "fresh drinking water of good quality" for the factory hands. Employes and mill owners should not expect protected water when they defile another's supply. It should be known that the water supplied is not contaminated by seepage through ground seams, by rainwashing or admixture with polluted streams. Remote contamination must be guarded against to avert such an epidemic as occurred at Mt. Savage, Md. Such determinations if in the hands of the factory inspectors would be greatly facilitated by reports of contagious diseases from the health bureaus; conversely, the factory inspectors by reports of stream pollution could be of much assistance to boards of health.

Factory inspectors have an excellent opportunity to collect data upon and to legislate against the enormous damage to the water courses by factory wastes, but this activity has been woefully neglected. In 1903 there were inspected in this State, exclusive of Philadelphia, 84 tanneries, 15 dye works, 145 laundries, 58 saw mills, 129 breweries, 28 paper mills, etc., a large proportion of which undoubtedly discharge their wastes into the various water courses to the detriment of other factories and of consumers. The drainage resulting from such disposal of these wastes is attested by the results of the numerous suits in Massachusetts, Rhode Island, Maryland and other States. Although it has been legally declared by Judge Thayer (Phil., 1884,) that "To pollute a public stream is to maintain a public nuisance, and a crime for which those who perpetrate it are answerable in a court of criminal jurisprudence," factory pollution of streams usually continues until checked by orders from a court. This should not be. The cause of possible injury should be sought by those who have the opportunity, and the damage averted.

The destruction of fish by the factory wastes, which could be easily discovered by the inspectors, should be made an object for study and correction.

In Pennsylvania there are 39 inspectors for the entire State; too few to accomplish the work that could and should be but is not done. In New York State there are 38; in Massachusetts 28. In Massachusetts the duties of inspection are wisely divided between the Police Board and the Board of Health. To the health inspectors is assigned the sanitary inspection of factories, control of the installation of dust and fume protectors, conditions of toilet, guarding of machinery, elimination of the effects of excessive heat and dampness, provision for egress from fire, checking of spitting, etc. Under the police department comes the enforcement of child labor laws, guarding of elevators, inspection of boilers, etc.

The present needs of the State are the adoption and enforcement of laws of the pattern of those in Massachusetts. Pennsylvania's needs are an affiliation of the Factory Department with the State and local boards of health, with the submitting of appropriate reports. The supervision over the hygienic conditions of factories, noxious gases and dust, spitting, dampness, ventilation, sanitation, nuisance, location and condition of toilets, dairy and other food inspection should be placed in the hands of medical men qualified in sanitation, as the water supplies and transmission of diseases now are. The factory inspectors should retain their other duties, being largely advisory mechanicians rather than sociologists.

It cannot be expected that factory builders, factory owners and operators will adopt means for the protection of these employes until they receive free instruction and advice which is backed by legal authority, and are then led to appreciate the importance and economic value of saving the healths and lives of the workmen. Those factory accommodations which mean inconvenience and estheticism require attention, but those industrial conditions which spell danger and death demand correction.

5038 *Pine Street.*

In using artificial methods for infant feeding, fresh milk, modified by Mellin's Food, is highly recommended.

MERCURY—PHYSIOLOGY AND THERAPY. IS IT A SPECIFIC IN GERM, TOXIC AND DEGENERATIVE DISEASES?*

By H. E. JONES, M. D., Roanoke, Va.
Physician and Surgeon to Rebekah Sanitarium

To all forms of life, high and low, the chlorides of mercury are very destructive; especially is this so of the lower forms. It has been found that a solution of 1 to 50,000 will kill and stop the development of most of the germs that are known.

Mercury is diffusible, and when applied to the skin and mucous membrane it is readily absorbed, and when taken into the system in small doses it increases the red corpuscles of the blood; from this fact it is considered a desirable hematonic.

Mercury is an absorbent and systemic germicide; it is a laxative in medium doses and an active cathartic in full doses. It is a vasomotor constrictor, relieves local congestion and inflammation. All the glands of the body are stimulated and their action increased by the use of mercury, and it is a lubricant of all glands contigeous to, and of the alimentary tract. It is a diuretic of the first quality in medium doses. It has a tonic regenerating and germicidal effect on the whole genito-urinary tract. It is eliminated from the system by the intestinal glands and kidneys; in medicinal doses, these glands are not injured. The drug can be taken indefinitely without injury to the animal economy. This applies to all the preparations of mercury, but I especially have reference to bichloride and calomel. There is no deposit in the tissues and bones of a permanent character, as it is comparatively rapidly eliminated. The physiological function of the salivary and intestinal glands are gently increased; they are toned up and their normal physiological action is established—even when their action is handicapped by toxines circulating in the blood, as a result of deficient elimination. It overcomes these poisons more effectually than any other known drug. In severe salivation it has been found that the salivary glands are not injured, but are found on microscopal examination to be perfectly normal; therefore, it follows that no other glands of the body will be injured by it. As it is readily absorbed by the skin it has the advantage of being used by inunction with full physiological effects. It is absorbed by all of the tissues of the body, showing that every cell comes in contact with it and each individual cell's function is increased; there is increased elimination, improved functional activity and nutrition.

The deleterious effects of the drug are caused by poisonous doses; non-poisonous doses are much larger than are given by the text-books as much as 280 grs. of calomel have been given without poisonous effects, but with decided curative effect; as much as 7 1-2 grs. of bichloride have been given to a 35-lb. animal (dog) for the purpose of killing it, which it failed to do, but cured it of its supposed incurable disease. Bichloride of mercury is a stimulating and reconstructive tonic, systemic and local germicide. It increases functional and tissue activity, nutrition, strength and weight. It increases blood pressure, promotes absorption, secretion, and excretion, endosmosis and exosmosis. It causes contraction of relaxed arteries, veins and capillaries; it is a vasomotor constrictor, relieves local congestion and inflammation; it regenerates and revitalizes all tissues to such an extent as to check senile and diseased degenerative processes. It checks and stays the process of degenerative changes in all the organs and tissues of the body, and when degeneration has taken place, the tissues are more or less revitalized and regenerated by the continued and judicious use of the the drug. The whole nervous system is improved and benefitted, and put into a healthy condition by its use; hence, it is largely used in ataxias and pareses.

From my own observation and the opinion of others, it is my belief that bichloride is a renovator, lubricant, and regenerator of the system, an absorbent and systemic germicide. As bichloride is one of the most powerful of germicides and antiseptics, it is universally used in the whole field of surgery and obstetrics as a preventive of germ infection and as a curative agent in septic cases, and it is recently being largely used as a specific, or curative agent, in most all of the germ diseases by a goodly number of widely separated physicians. I believe the time will come when it will be universally used and applied as a specific or curative agent (by the whole profession) in all infectious and contagious diseases, and

*Read before the Medical Society of Virginia, at Roanoke, October 5 8, 1909.

also in the functional degenerative and toxic conditions. The profession has been, and is at present, looking for a specific in germ diseases. From many quarters it is pointing its fingers at mercury and its most potent salts, which more nearly approach the ideal than any other known drug.

As bichloride is stable in most acid, alkaline and neutral solutions, it follows that weak solutions in the living tissues do not break them up, into their component chemical eliments, and combine with them to form new compounds, as the living tissues have greater resistance to chemical disintegration than non-living tissues. The tissues are classed under the head of higher forms of life, which are not destroyed by the weak solutions. Germs, the lowers forms of life, are destroyed by the weak solutions, and hence are destroyed while inhabiting the tissues that are saturated with them (solutions).

Mercury and its preparations are given by inunction, mouth, inhalation, and hypodermatically; the latter method is the most successful way of giving it in severe, acute infections. I use this method in connection with the oral route and inunction in tuberculosis and syphilis. I have used it only by inunction and the mouth in all other germ diseases that I have treated (except recently I have also given it hypodermatically in typhoid), and so far have had good results by these methods of administration. Lately I have also used it successfully by the hypodermic in tetanus, septicema, and streptococcic infections.

I stated in a former paper on mercury, read before the Roanoke Academy of Medicine and the Medical Society of Virginia in October, 1908, that from my own experience, and that of others, I was convinced that bichloride was practically, from a clinical point of view, a specific in all germ diseases. I believe up to that time I was the only one so convinced and used it as such. From communications that I have received I believe a great many physicians are interested, and believe that it is not a fad, but a possible fact that it is a specific, or at least a most powerful and potent remedy in the treatment of those diseases.

From literature you have seen, all physicians consider mercury a specific in syphilis, but only a few, here and there, and often widely separated, believe it to be a specific in some one special germ disease; none of these physicians considering it as such, believe it to be a specific in all the germ diseases. Dr. Shoemaker considers it in his work on "Materia Medica," an excellent remedy in most all diseases, and practically a specific in psoriasis; Dr. Selli in tetanus; Dr. L. G. Pedigo in pneumonia; Dr. B. L. Wright in tuberculosis; Dr. Leaming in the germ diseases of children and dysentery in adults.

Dr. Wm. L. Harris, Providence, R. I., Surgeon to St. Joseph Hospital, considers mercury in conjunction with arsenic and iron, a curative and preventive agent in malignant growths and that it does so by preventing round cell proliferation, which is the pabulum of syphilitic, cancerous and tuberculous germs, and when the round cells are destroyed, starves the germs, thereby effecting a cure.

Is it not logical to believe that if mercury is considered a specific in syphilis (a germ disease) by the whole profession and by widely separated members, a specific in some special germ disease, that it is also a specific in all germ diseases? If it will kill in the human body the germs of syphilis, tuberculosis, anthrax, scarlet fever, pneumonia, dysentery, diphtheria, and typhoid fever (as stated by different doctors), why will it not kill any other germ inhabiting the human body? It is my belief that it will, and that if so used generally by the profession, doctors will find it a specific or curative in its effects; and if used as advised, the number of lives saved and the millions of dollars of expense avoided every year will be incalculable; at any rate the results will be such that ninety-nine physicians out of a hundred have never dreamed of.

Dr. S. J. Gill believes that calomel in ten, twenty and thirty grain doses, given every other night, is practically a specific in typhoid fever. He has treated 150 cases in the last fifteen years with only three deaths—surely a low death rate. One of these deaths was caused by over eating producing perforation and hemorrhage; one was not given the drug by the attendant, and the third patient was taken in hand at such a late day that it was impossible for anything to save him. He believes that all cases put on the treatment early will be cured. He never had a case of salivation from these doses of calomel. It was his experience that it was almost impossible to salivate a typhoid patient.

Dr. S. I. Conduff, Hollins, Va., believes 40

grain doses of calomel (four 10-grain capsules, one given everp hour until all are taken) is a specific in pneumonia—when the drug is given in the first twelve, twenty-four, thirty-six, or forty-eight hours. He says you will accomplish with it in twelve to twenty-four hours, what you would accomplish with the old line of treatment (when the patient lived) in from seven to ten days. He has treated about thirty cases in the last four years with two deaths; one of these could not retain any drug or food given (it should have been given hypodermically); the other one was a tuberculous patient, contracted pneumonia; says he never had any salivation from the large doses. He says the effects of the drug in 40 grain doses is germicidal, cathartic and sedative. No morphia nor expectorants needed. No stimulants except strychnine are given when the crisis is produced in from 12 to 24 hours after the treatment is commenced.

Dr. G. W. Drake, of Hollins, Va., believes mercury is a systemic germicide and is a specific in a number of germ diseases. He has used 60 grain doses of calomel in the treatment of yellow fever (epidemic) with wonderful success.

Dr. Henry Alfred Robbins, Professor of Dermatology and Syphilology, Howard University, Washington, D. C., after reading a former article by me on "Is Mercury a Specific in Infectious and Contagious Diseases, as well as in Syphilis?" wrote me that "My experience of nearly fifty years practically coincides with yours." He further says, "I had a patient several months ago with laryngeal tuberculosis in a young lady. She was treated by one of our leading throat specialists. Koch's bacilli were found in great numbers; she was put on beechwood creosote and lost weight rapidly until she weighed less than one hundred pounds. I applied inunctions of mercury over the enlarged glands of the neck and gave saturated solution of potassium iodid until the physiological effect was obtained. She gained in health rapidly and in less than three months she weighed 144 pounds. I saw her this morning (2-4-1909) and she is a perfect picture of health."

Dr. Robbins read a paper before the Therapeutic Society of the District of Columbia on June 13, 1908 (of which Society he was president) on "The Therapeutic Action of Iodine and its Compounds and Mercury in Diseases, Especially Exclusive of Syphilis." This paper I recommend to all of you; it is valuable. I think the doctor's results given in that paper, were chiefly due to the mercury which was largely aided by the potassium iodide. He says that scrofula, tuberculosis, glanders, rheumatism, brain tumors, diseases of the nervous system, blood vessels, asthma, tubercular meningitis, chronic hydrocephalus, nephritis, amyloid disease of the kidneys and other organs were cured by mercury and iodide of potassium. He also stated that Dr. Saborand states that the only two known cases of human glanders which had recovered had been taken for syphilis, and consequently were treated with mercury. Dr. Robbins stated in a former paper which he quoted in the above article "that mercury killed bacteria and that potassium iodide removed the debris."

Dr. G. A. Molleen, of Denver, says "Iodine is not antagonistic to the virus of syphilis. It is, or should be, used only to remove the results of the disease—hyperplasia, granulomata, etc. It is indicated when the same conditions exist as the result of other infections as well as those of syphilis."

It is my belief that no case of syphilis, nor any other germ disease can be cured with iodide of potassium alone. It is not a systemic germicide, but an alterative and absorbent; mercury is the germicide that destroys the germs; the iodides remove the degenerative deposits which are the result of the infection.

Dr. Illingsworth, of Cincinnati, believes that iodide of mercury is practically a specific in infectious and contagious diseases. A number of years ago he published a paper to that effect. Fifteen years ago Dr. N. B. Shade treated tuberculosis with mercury and advocated its use for that disease. "He suffered the fate of an innovater and brought his ideas forward a decade too soon." It is said he went further in the treatment of tuberculosis than Dr. B. L. Wright.

In my former paper I stated that the text tells us that mercury is used with marked beneficial and curative effects in practically all of the germ, malignant, degenerative, toxic, and functional diseases. By experience and observation, I have found the above facts to be practically true in all of the germ diseases that I have treated. In this day of drug nihilism,

brought about by the teachings of surgeons and a few professors in the medical schools, I think it would be advisable for every physician, especially the younger members of the profession, to study well the text book literature of mercury. First study its preparations; second, its pharmacology; third, its physiological action; fourth, its therapy. Take each heading separately and master it before taking up each succeeding one. When completed, go over the whole subject again and again until it is mastered and at your command and fingers' end at all times. Then use the drug for all the diseases and conditions that the text recommends. Keep your eyes open, observe its effects on the diseases treated, make comparisons with other modes of treatment. Then I will venture to say that you will be surprised and convinced that it is practically a specific for all of the diseases that the text recommends.

I have devoted over twenty years, the whole of my medical career, with the exception of a few months, to the management of infections, contagions, pathological lesions, and functional diseases caused by germ infections, injuries, disordered functions, and physiological chemical changes. During this time I have endeavored to put into practical use the two great ways of treating them—that is, the skillful administration of drugs and skillful surgery—to the best of my ability. I have used most of the ordinary remedies advised by the text books and journals; with such I have treated nearly all of the diseases that are common in this State. I have endeavored in surgical diseases and conditions to apply the best technic advised by surgical literature and the able counsel of my local fellow physicians. Locating in this section at a time when we had no skilled specialist and hospitals as we have now, all kinds of surgical work fell into the hands of general practitioners—from the most insignificant surgical lesions to those of the greatest magnitude. In this varied experience and observation, I have found mercury (and its preparations) the most potent, useful, and applicable to the treatment of more diseased conditions than any other drug or combination of drugs in the Pharmacopeia. In the last twelve months I have treated six cases of tuberculosis with bichloride and calomel; three recoveries and two deaths. In the last two years I have treated forty cases of typhoid fever with bichloride and calomel; no deaths. And none had a fever lasting longer than eleven days from the commencement of the treatment.

In 75 per cent. of these cases the fever reached normal both in morning and afternoon on the seventh, eighth, and ninth days from the beginning of the treatment, and remained normal from that time on. In 25 per cent. of these cases the fever reached normal in the morning of the seventh, eighth, and ninth days with a rise in the afternoon not as high as 100 degrees until the eleventh day, when it reached normal in the afternoon and remained so.

In all of these cases when the temperature reached normal in the forenoon they began to express a desire to get out of bed and had an abnormal appetite and clamored for food. I have not had a single hemorrhage, perforation nor death when this treatment was used as advised in a former paper, and continued throughout the illness. There was one death in a case who had received the treatment in the second week of the disease for only about two days. This case developed typhoid meningitis and dissolution rapidly followed.

I will report two illustrative cases to show the promptness and apparent specific action of the treatment in typhoid.

Nos. 1 and 2.—August 3, 1908, I was called to see Mrs. H., age 26, and son, age 5, both ill and occupying the same bed. They had been confined to bed four days when I arrived. Both patients hal all the classical, clinical symptoms of typhoid fever, including numerous rose spots over abdomen, arms, chest, and thighs; abdomens tympanitic and tender on pressure; mother's temperature 104° F.; son's temperature 105° F. He was delirious. The specific treatment was commenced on August 3rd; August 10th the temperature of both had dropped to normal both morning and afternoon and remained so; both were begging for food and wanted to know when they could get out of bed. These cases were a good test of the virtue of the specific treatment of this disease with mercury. Dr. Loranchet treated twenty-one cases of typhoid with bichloride. He says it controlled and abated the toxic symptoms, and decidedly checked and controlled all severe symptoms—no deaths in the twenty-one cases. In my experience, the cerebral symptoms (semi-comatose and comatose state) were cleared up in from twelve to twenty-four hours.

Since the reading of my former paper I have received several communications from physicians desiring to know my method of treatment of typhoid.

Method of treatment for adults: Order the following prescriptions from the drug store:

No. 1. ℞ Hydrarg. Chlor. Mit. dr. 1 1-2.
Sodii Bicarb. dr. 1.
M. ft. chart. No. 3.

S. One to-night and others when directed. Follow with oil or saline next morning at 10 o'clock.

No. 2. ℞ Hydrarg. Chlor. Corrosiv., 1-16 gr. tablets for internal use (P. D. & Co.), No. 100.

S. One every two hours, day and night.

No. 3. ℞ Hydrarg. Oleatum, oz. 1-2.
Lanolin, oz. 1-2.
Petrolata alba, qs. ad. oz. 2.

S. To be applied to abdomen night and morning.

The calomel is given the first night, followed the next morning with castor oil or saline and no other medicines are given during the day. The ointment is applied to the abdomen night and morning until the fever reaches normal. The day following the administration of the oil or saline, a 1-16 grain bichloride tablet is given every two hours, day and night, until the temperature reaches normal. Then I only give the bichloride tablet from three to five days longer to prevent relapse. Occasionally on the third or fourth night after the first dose of calomel I give a second dose of calomel at bedtime; the next day no other medicines are given; the day following the bichloride tablets are resumed until the temperature reaches normal, when they are only given three or four times a day for three to five days, when they are stopped and the patient is put on a digestive agent and a reconstructive tonic.

It is barely possible that I give more bichloride and calomel than is absolutely necessary. My object is to be sure to give enough for specific effects. There is always a rapid convalescence after the temperature reaches normal.

It will surprise you how little else is to be done for these patients and what little nursing is required in comparison to the old way of treating them.

I have treated a number of cases of *diphtheria* with mercury as the specific agent. The cases subsided as quickly as any cases I have treated with antitoxine. The ointment of oleate of mercury was applied to the neck and the bichloride was given in a solution of distilled water and diluted hydrochloric acid, about 10 m. of the acid to an ounce of water; the dose of the bichloride for each half teaspoonful was made suitable to the age of the patient. The dose of calomel was given every other night.

Malaria.—Mr. S. contracted a severe case of malaria in Cuba, which was complicated with hypertrophic cirrhosis of the liver and spleen and ascites; he also had profound anemia and emaciation. I could not relieve him with quinine, iron, arsenic, and salines; I tapped him three times at intervals of from eight days to two weeks, each time drawing from five to six quarts of serum. The last time he was tapped I put him on the specific treatment that is, 30 grains of calomel once a week, followed with salines between times, and gave him 1-16 grain bichloride and ten grains of iodide of potassium six times a day. From that day he began to make a rapid recovery, and in six weeks was entirely well, except somewhat anemic and emaciated. I then dispensed with the bichloride and iodide of potassium and put him on 10-drop doses of Donovan's solution and 15 drops of syrp. of iodide of iron three times a day. In six weeks from the beginning of this treatment he had regained his former weight and strength, and his anemia had entirely disappeared. He has remained well ever since.

The above complications with this disease the text tells us prove fatal.

Prostatitis.—Mr. S., age 74 years, uremic poison from retention of urine; patient semi-comatose; catherized the bladder with difficulty. Made an examination of prostate and found it as large as a medium-sized orange; there was cystitis; muco-pus in the urine. I put him on 1-16 grain of iodide of mercury and ordered his bladder to be douched once a day with a gallon of hot boracic acid solution; he was also given an active purge, 10 grains of calomel with 20 grains of compound jalap powder; he was continued on the iodide of mercury for several weeks longer and was then put on iodide of potassium. In the beginning, there was about eight ounces of residual urine and the patient had to be catheterized from one to three times

in twenty-four hours. In ten weeks from the time the treatment was commenced there was only two or three drams of residual urine and in two more weeks there was practically none. An examination was made at this time and the gland was found but a very little larger than the average-size gland. This patient also had arterio-sclerosis and phlebitis. There were ecchymotic spots on the hands, legs, and body. This condition is what I would term senile and toxic purpura. In about five weeks after the treatment was commenced this condition disappeared also. I believe the mercury used in this case relieved him by (1) its germicidal effect; (2) its tonic and alterative effect; (3) by contracting the blood vessels and relieving the local congestion and inflammation; (4) by its eliminative effects; (5) by its power of cellular regeneration of all the cells of the body, especially those of the blood vessels, and (6) prevented and destroyed the round cell proliferation. It is my belief that prostatic enlargement, congestion, and hypertrophy in the aged, are due to degenerated arteries and veins giving rise in that organ to a sluggish circulation, extravasation of serum, inflammation and round cell proliferation and malnutrition with all of its evil consequences, all of which conditions are usually cured or greatly improved by the use of mercury and potassium.

Dr. Claiborne, deceased, of Petersburg, Va., claimed in a paper written fifteen years or more ago, that bichloride is a specific in purpura hemorrhagica, and that it would cure it when everything else had failed.

We know that this disease usually follows malaria, scurvy, cerebro-spinal meningitis, variola, measles, septicemia, ulcerative endocarditis, hemophilia, nephritis, leukemia, pernicious anemia, jaundice, tuberculosis, degenerated blood vessels in the aged, snake poisons, and various other acute and chronic germ and toxic diseases that may produce degenerative changes in the tissues, blood vessels and organs. You may review the pathology of all diseases and you will find the principal dangerous and fatal effects of all of them are cellular degeneration, partial or complete, of a portion or whole of the economy. In acute and chronic Bright's disease there is no drug that will equal the curative effects of bichloride.

Dr. H. G. Klotz, of New York, says: "A case of chronic nephritis with albuminuria which existed prior to syphilitic infection entirely disappeared during the treatment of syphilis with mercury injection." I have relieved and cured a number of acute and chronic cases of nephritis with bichloride, given in 1-24 to 1-32 grain three times a day. It relieves nephritis in the same way that I have described above in its effects on prostatitis and purpura. It is the best remedy that I know of for the relief of the nausea and vomiting of pregnancy, which is due to intoxication, deficient elimination, reflex irritation, and disturbed metabolism, given in 1-24 grain doses three or four times a day. It is one of the best remedies for gastric ulcer; in acute and chronic articular inflammatory rheumatism, it is most effectual in conjunction with the salicylates. In chronic alcoholism it is one of the best remedies that can be used as a curative agent. It relieves this degenerated condition in the same way that it relieves, as described above, prostatitis and purpura. It is one of the quickest cures I know of for gonorrhoea in 15 to 30 grain doses of calomel every third or fourth night for three or four doses, and 1-16 grain of bichloride five or six times a day by mouth, and a solution of 1-10,000 used as an injection three to six times a day. "The urethra is not a simple tube, but a complicated one, with folds and crypts and pockets that cannot be reached by injections" but can be reached with a systemic germicide.

We should throw aside timidity and arm ourselves with courage, and put forth every effort and means at our command to be used to stay the disaster and mighty wrecks of disease and of time on the human organism. We should remain active and useful long after the allotted period given in sacred literature, and not suffer ourselves to be set aside at 40 and be chloroformed at 60. If Time cannot be stayed in his silent course, and speeds on his rushing pinions ceaselessly, without rest, pity or remorse, for Heaven's sake let us be able to ride on his pinions as long as possible. In military history we are told in verse—

"The boast of heraldy, the pomp of powder,
And all that wealth and beauty ever gave,
Awaits alike the inexorable hour;
The path of glory leads but to the grave."

We should stretch, and extend the paths of glory indefinitely, not believing—

"The grave is better than over-burdened life;
Better the quick release of glorious wounds;
Better the spearhead quivering in the heart,
Than daily struggle against fortune's curse;
Better in manhood's muscle and high blood
To leap the gulf than totter to its edge
In poverty, dull pain, and base (early) decay."

Why not? Hallow found in his review of statistics on longevity that out of eleven hundred centenarians, they ranged in age from 100 to 169 years. Doctors occasionally live long and useful lives to the end. Dr. Gosolin, of Maine, asphyxiated at 93, was in active practice to the day of his death; Dr. Raynes, of Maine, practiced medicine up till his 99th year; Dr. Boisy, of Havre, practiced up to his 103rd year; Dr. William Hotchkiss, a native of Virginia, lived 140 years—he practiced medicine a number of years after his 100th birthday.**

It may be that these old fellows used a lot of mercury. You remember it was a habit with all the older physicians of the sixteenth, seventeenth, eighteenth, and nineteenth centuries to use plenty of it with themselves and patients.

Now, gentlemen, the surest way for us to do this is to live correct lives and use mercury when indicated.

10 *South Jefferson Street.*

EXAMINATION AND DIAGNOSIS OF DISEASES OF THE ANUS AND RECTUM.*

By E. H. TERRELL, M. D., Richmond, Va.

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It has been said that it is the careful doctor who examines his patient's rectum, for there is no part of the human anatomy that has been more neglected by the average practitioner. There is apparently no good reason for this, unless it be that our medical schools have not given sufficiently careful instruction in methods of examination and diagnosis of rectal diseases; or, unless we have been indifferent because of a certain repugnance by both patient and physician to rectal examinations. When we note the frequent occurrence of ano-rectal disease (there is no part of the body so often affected) at all ages and in every station in life and see the consequences of such cases when overlooked, we wonder that more attention has not been paid to these troubles.

When neglected the simplest of rectal diseases often has a tendencey to assume serious proportions and result in detruction of tissue and loss of the function of the part or may in some instances become malignant. There is no portion of the body to which this applies more forcibly than to the rectum.

Medicine and surgery have undergone a very complete revolution during the last decade or so; old slip-shod methods and guess work will do no longer, for the patients expect and demand more than a casual glance and the asking of a few questions. It is not uncommon even now for a patient suffering from some rectal trouble to call to see the doctor and inform him that he wishes treatment for his piles; for the patient often has no conception of other diseases of these parts, and the physician, after asking a few unimportant questions, will write a prescription for some ointment to be applied as directed. The patient may or may not have piles—the ointment may possibly do good, but most probably will not; but, at any rate, you will admit that the patient has not received a square deal. He is most assuredly entitled to a careful and painstaking examination to elicit, if possible, the true nature of his malady.

A correct diagnosis having been made and the proper treatment given, good results will be gotten in the great majority of cases. Without the proper examination, it is fallacy to hope for betterment except by mere chance.

Diseases of the anus and rectum often progress very rapidly, and the delay of a few days in receiving the proper treatment may convert the simplest trouble into one of very great magnitude, thereby causing the patient a great deal of suffering, loss of time, expense and probably endangering his life. As an example, take a case of thrombotic hemorrhoids, which is one of the simplest of conditions to treat and can be cured in three or four days, but which, not infrequently, if left alone, results in fistula or perirectal abscess, often taking weeks or months of careful attention to effect a cure. Again, as in other portions of the body, it is most important that an early diagnosis of ma-

*Read before the Richmond Academy of Medicine and Surgery, September 14, 1909.

**Golden and Pyle.

lignant disease of the rectum and anus should be made, for it is only in the early stages that we can expect to eradicate cancer.

With a little experience, an examination of the rectum and sigmoid is made quite as easily and as satisfactorily as an examination of the vagina, and should be made quite as much of a routine. If we made more frequent rectal examinations, the diagnosis of a great many of the chronic pelvic lesions would be cleared up; for it is not rare for diseases of the rectum to be mistaken for vesical, ureteral, prostatic, vaginal or uterine affections.

To begin with, when a patient presents himself for treatment, the history of the case should be carefully taken, allowing the patient to tell his story in his own words. While this may be a little tiresome to the physician, still, if he has been an attentive listener it will have the effect of putting the patient somewhat at his ease and will engender in him more confidence in the physician. While this appears in itself of little consequence, it often means a great deal, for if the patient is unduly excited, embarassed, or lacks confidence in the physician the examination to follow will hardly be successful.

Age, vocation, habits, mode of living, previous diseases, present symptoms and how long present should all be gotten and recorded, and, if necessary, his ancestry should be inquired into, though heredity is of very little importance in rectal diseases. It is very important in prescribing a diet and the amount and kind of exercise a patient should take (which is so necessary in rectal diseases), that we should have a clear idea of his present habits in these respects, for it would hardly be to our credit to advise more exercise for a professional acrobat or foot-ball player, or to inform him that he was eating too much meat when he might be a vegetarian. Just very recently a lady told me that she changed doctors because when she asked the former physician the cause of her child's sickness he stated that it was due to drinking too much milk, when the fact was that the child had a great dislike for milk and had not drunk a glass of it for a year. Such little mistakes have caused many a doctor the loss of a patient; but they would not happen if we inquired a little more closely into their regimen.

The Sims or left lateral is the best all around position for the physical examination; still others, as the knee-chest or lithotomy position may, at times, be preferable. We should first carefully inspect the anal region, noting the shape and size of the orifice, color of the skin, whether unduly dry or moist, any ulceration, fissure or fistulous opening, external, protruding or internal hemorrhoids, polypi, etc. By having the patient strain, at the same time pulling the buttocks well apart, we can gain a fair view of the lower part of the anal canal.

By palpation, any tender points, fistulous tracts or fluctuation indicating abscess may be made out. Digital examination is one of the most valuable means of disagnosis of disease in the first three or four inches of the rectum and should always precede the instrumental examination. The finger, covered by a rubber cot, should be well lubricated and first passed upward and forward until the sphincters are passed, then upward and backward. While the finger is passing through, note the condition of the sphincters. If there is a twitching, tender muscle, it indicates an acute trouble near the margin; if it is hard and firm, it indicates a chronic condition; if relaxed, you would expect some malignant or exhausting disease.

Between the sphincters we must look out for openings of fistulas, fluctuations, foreign bodies, etc. Further up, we note whether the membrane has its normal folds or whether it is smoothed out, the latter indicating atony; whether the mucous membrane is soft and pliable or harsh and dry, showing insufficient secretion. Polypi, carcinoma, stricture and ulceration may be felt if present, and their nature determined by the sense of touch if the finger tip be sufficiently educated. One can scarcely hope to be a successful proctologist until he is able, to some extent, to recognize what he feels.

While the finger is in the rectum the coccyx should be grasped to see if there is tenderness or inflammation there. The prostate in man, ovaries, tubes, and uterus in the female should be palpated to ascertain if these are enlarged, inflamed or abnormally situated. Often diseases of these organs have their symptoms referred to the region of the rectum, and vice versa. If gynecologists would supplement their vaginal by a rectal examination, much additional information would often be gained, and probably occasionally assist materially in making a correct diagnosis. Upon withdrawal of

the finger the character of the discharge—blood, pus or mucus—should be noted, and also the odor.

An instrumental examination is necessary when we wish to explore higher than three or four inches of the rectum. The general impression that this is extremely painful and that a general anesthetic is necessary is entirely fallacious, for with proper care and gentleness there is usually very little pain, but more the sensation of discomfort.

Before passing the speculum or proctoscope, the finger should always be gently passed into the rectum for the double purpose of lubricating the canal and stretching, to some extent, the muscle. Another important purpose is to be sure of no obstruction to the passage of the instrument. The knee-chest position is probably the best for instrumental examination, getting the chest as close as possible to the table, the thighs perpendicular to it and flexing the back to the fullest extent before beginning.

There are various specula on the market, but for most purposes there is none better or easier of introduction than an ordinary small or medium-sized Sims' vaginal speculum.

The speculum or proctoscope should first be thoroughly lubricated and introduced by a firm but gentle pressure against the sphincter, giving sufficient time for relaxation of the muscle. In passing through the anal canal, the instrument is held at an angle of 45 degrees to the table or on a line with the patient's body while in the knee-chest position. After passing the sphincter, the tube is lowered until it is parallel with the line of the table. If the proctoscope is being used, the obturator is now removed, when air will rush in and inflate the canal so that the tube may be further guided to the desired height, the parts inspected, and applications of the necessary remedies made by means of dressing forceps or applicators.

By this means the whole of the rectum may be very easily examined; and by the use of the longer tube or sigmoidoscope, the whole of the sigmoid or, as claimed by some, the lowest extremity of the descending colon may be inspected. This high examination should only be attempted by one having had some experience in the use of these instruments, and is best done then with a specially devised pneumatic scope with an electric light attachment while the bowel is dilated just ahead of the instrument. The small electric light at the distal end makes the passage of the instrument much easier and decreases the danger of injury to the mucous membrane.

204 *East Grace Street.*

PELLAGRA—A CLINICAL STUDY AND REPORT OF FOURTEEN CASES.*

By WILLIAM FRANCIS DREWRY, M. D., Petersburg, Virginia.

Superintendent Central State Hospital; Ex-President Medical Society of Virginia, etc.

(Concluded from last issue.)

Case III.—James Q. (4358). Admitted May, 1901; brown, age 21, was emaciated and feeble; later developed diarrhea, which recurred every spring and summer. On admission he had the usual symptoms of simple mania, but within a year became demented. About two years ago he developed tuberculosis, which, under treatment at the farm colony improved to such an extent that he appeared to have practically recovered.

Last spring the diarrhea reappeared, and with rapidly progressing emaciation and feebleness, difficulty in standing or walking, characteristic skin symptoms, involving the hands, feet, and face—quite similar in character and extent to those in the cases having the "moist" variety, so to speak. There were severe stomatitis, profuse salivation, extremely red tongue, gums, and mucous membrane of the mouth; also various nervous symptoms. In fact, all the symptoms were practically like those described in the other cases. Despite every possible effort in the way of treatment, the patient died July 22nd, 1909, in a state of collapse.

Case IV.—William J. (5193). Admitted May, 1904, from Buckingham County, 32 years old, mulatto. Was anemic and in a decidedly cachectic, debilitated condition, had diarrhea, and showed ample evidence of malnutrition. The patellar reflexes were exaggerated, tongue was tremulous, and there was an eruption, which, at that time, we took to be probably syphilitic, and he was treated accordingly.

From an examination made last week by Dr. Willcox, there was conjunctivitis, and the pupils of both eyes were abnormally large and responded poorly to light. No other eye abnormalities.

The mental symptoms on admission were

*Read before the Southside Medical Association, Courtland, Va., September 14, 1909.

depression, with occasional excitement, incoherence, confusion, disorientation, hallucinations, delusions, impaired memory, insomnia, etc. (mania-depressive). Every spring and summer there has been been recurring obstinate diarrhea and general debility; and the mental symptoms have progressed till now there is complete dementia. Early last spring, in addition to the diarrhœa, the skin over the face, sides of neck, sternum, wrists and dorsum of hands and feet were involved in lesions, which, in the main features, were like those described in the other cases having the "moist" variety. There were also all the typical gastro-intestinal symptoms, profuse diarrhea, sore mouth, red tongue, and the nervous symptoms usually observed. For several days we regarded his condition critical. However, he gradually improved, all the physical symptoms, including the skin lesion, disappearing. He is demented.

Case V.—Mary S. (6266) Admitted from Petersburg, June 22, 1907, color black, age 22, single, occupation, none; lived in unhygienic surroundings; duration of mental symptoms before commitment several months; High school education. She was in a poor state of health—anemic, weak, emaciated, usually constipated, skin dry and harsh. In the spring and summer of 1908 there were diarrhea and marked physical deterioration, persisting for some time.

Mentally, she was apathetic, untidy, depressed, confused, silly, disoriented, memory was defective, consciousness clouded, had hallucinations of sight and hearing, negativism and other symptoms of dementia præcox.

In April, 1909, poor appetite, stomatitis, salivation, fetid breath, red tongue and gums, and diarrhea developed, all of which, with short remissions in the diarrhea, have continued to the present time, in a more or less severe form.

In July, characteristic dark pigmentation, roughness, etc., began to appear on dorsum of hands, at the metacarpo-phalangeal articulations, spreading to all other joints of the hands and the anterior and posterior surface of the wrists. More recently dark discoloration has appeared over the malleoli of both feet, and over the olecranon processes. There is now beginning dry exfoliation, etc.

The physical and mental examinations, repeatedly made during the past several weeks, show the following additional symptoms: Cogwheel respiration in upper lobe of right lung, rate of respiration, 16 to 24, pulse 90 to 120, temperature 99 to 101 F., blood pressure 115 m.m., anemia, debility, but little emaciation, abdominal recti muscles somewhat tense, conjunctiva pale, headache. There is consstant groaning and frowning, especially when moved as if in pain, disinclination to walk, as if suf fering from dizziness, though she does not complain. Patellar reflexes are diminished.

Examination of eyes by Dr. Wilcox showed only pupillary contraction, though the pupils were responsive to light. Eyes otherwise normal in every respect.

Mentally, there is mutism, indifference, and other indications of progressive dementia. The patient never smiles or laughs.

Figure 5. Case 6. Pellagrous lesions on hands, neck, and feet.

Case VI.—Rebecca M. (6888)—Admitted January 29, 1909; color, brown; age 24, single, no children, no regular occupation, habits immoral, cause of insanity said to be poverty, duration of mental symptoms reported to have existed a few months. She was emaciated,

weak, cachectic, had anorexia, and presented other evidences of lack of proper and sufficient nourishment. Besides, there were some dark spots and acne, causing a suspicion of syphilis.

The mental symptoms were mutism, indifference, depression, never smiling, untidiness, and others indicating dementia, probably dementia præcox.

By March the physical and mental symptoms had shown further deterioration. About that time obstinate diarrhea, stomatitis, skin lesions, etc., developed—the latter involving the face, hands and feet, similar in nature to those described in the other cases, except that at one stage there were blebs or blisters, which upon breaking, left denuded surfaces and some bleeding. In short, it may be called a "moist" variety of the disease. Dr. T. W. M. Long, of our staff, first recognized the disease in this patient as pellagra—in its incipiency.

All the physical and cutaneous symptoms continued till late in June, when they began to improve. At this time (Sept. 10th), there are no gastro-intestinal symptoms, and no evidence of skin lesions other than a little brand-like exfoliation on the dorsum of the hands. The site of the old skin lesion is perhaps softer than the surrounding surface.

Mentally there is no improvement, the patient being thoroughly demented. She is obstinate, never speaks nor smiles. Practically no intelligence.

Case VII.—Jennette C. (7068)—Admitted June 7th, 1909, from Danville, mulatto, age about 40, married. Unable to get previous history of diseases, except that she was a patient in a hospital in Danville in the summer of 1908.

When the patient came to us she was much debilitated, weak, anemic, and had vulvo-vaginitis. On the dorsal surface of both feet and hands and round both wrists there soon developed a dermatitis—an erythema—followed by dark pigmentation, dryness and exfoliation. The symmetrical outline, etc., presented an appearance very similar to that noted in the other cases.

There was diarrhea, which yielded first to treatment, and then recurred and was quite intractable. There were also intense stomatitis, red tongue and foul breath. The usual nervous symptoms were observed.

Mentally she was from the beginning much depressed, and mental lassitude was marked; she cried a good deal, never smiled or laughed, refused to talk or eat, having to be fed by tube; suffered from insomnia, etc., and later seemed to be in a state of progressive dementia. Diagnosis of pellagra was promptly made.

She was kept in bed and carefully nursed and treated, yet, the physical symptoms grew worse (excepting a brief period of improvement) and there was progressive mental deterioration. Before her death (July 24th) she was in a condition of physical and mental collapse.

Case VIII.—Eveline B. (4262) Admitted February, 1907; brown, age 20, single, no occupation. General physical health was good. Mental symptoms indicated dementia precox. There was nothing worthy of special note in her history until last January. At that time an irregular diarrhea developed, which by Spring and extending into July, was profuse and unyielding to treatment. but during the past few weeks has disappeared. Cutaneous lesions were observed late in winter or early spring and have continued to the present time, presenting the characteristics observed in the other cases, involving the dorsum of the hands, the tops of the feet, the ankles and leg to within three or four inches below the knees. The posterior aspect of the neck, extending from just below the occipital protuberance to the seventh cervical vertebra and between the sterno-cleido-mastoid muscles on either side. The sebaceous glands in the nose, alæ nasi, corners of mouth and mental prominence are hypertrophied. Stomatitis, salivation, fetid breath, excessive thirst, abdominal distension and tympanites, slight but general sclerotic blood vessels, slightly elevated temperature, rigidity of muscles constitute the chief physical symptoms.

Mental symptoms have gradually grown worse, the depression having deepened, mutism more constant and recently dementia is pronounced.

Case IX.—Annie F. (6784)—Admitted October 31, 1908; age 22, brown, married, no children. Phthisis pulmonalis; weak and emaciated; depressed, etc. Under treatment at the tuberculosis shack she rapidly improved. In February and March, however, he had an attack of severe diar-

rhœa, accompanied by gastric disturbance and general weakness. There was temporary improvement. The latter part of July the gastro-intestinal symptoms returned, and besides, sore mouth and lips, foul breath, hypersecretion of the salivary glands and thirst, all of which have continued ever since.

Beginning at the metacarpo-phalangeal joints on the dorsal surface, extending about half way up the arms, and about two inches on the interior aspect of the wrists, the skin showed first a dark pigmentation, followed by thickening, exfoliation, parchment-like feel, etc. The outlines of the diseased portion are distinct and symmetrical on both hands and arms.

At present (Sept. 13th) the patient is confined to bed, much emaciated, and showing the rapid physical decline observed in other cases. The temperature, respiration and physical symptoms indicate advancing tubercular processes.

The mental symptoms are depression, psychic pain, indifference, mutism, sadness, painful expression, never smiling nor laughing. She retains a fair degree of intelligence, though the mental state has gradually deteriorated.

Case X.—Elijah K. (7190). Admitted September 7th, 1909. Age 60. Married. Blacksmith. Industrious, but formerly drank to excess. Lived comfortably. Was in usual health until last spring or late winter, except had a cataract for which there has been an iridectomy. Discontinued his trade on account of defective eye-sight. About March he began to suffer from diarrhea, headache, dizziness, weakness in legs, backache, disagreeable sensations, insomnia, depression, etc. Under careful treatment there was improvement for a while. About June the physical and mental symptoms became aggravated, but no skin lesions were observed by the family until recently. Hallucinations of fear, delusions of persecution, (believing some one was trying to kill him) aimlessly wandering about, obstinate insomnia, etc., made it necessary to commit him.

On admission the following symptoms were prominent:—Diarrhea, salivation, stomatitis, tongue (particularly tip end and edges) and buccal mucosa inflamed, poor appetite, weakness and emaciation, and evidences of malnutrition marked. Pulse 80 to 90, respiration 20 to 24, temperature 98 2-5, arteries atheromatous, blood pressure 65 m.m., which is phenominally low. Tremor of hands and tongue, considerable motor paresis, difficulty in walking, uncertain gait, feet far apart, but no staggering. The patient was so feeble that he could not sit up, so was put to bed, stimulated, etc.

The skin on the backs of the hands, particularly over the joints, was discolored, scaly and exfoliating in some places, and thickened; cracked, parchment-like in others. The skin lesions on the face, involving the supra-orbital arch, the glabella, the bridge and alæ of the nose, over the malar bones, the cheeks, lips and mental prominence, bore the characteristics noted in the other cases. The sebaceous glands of the nose, etc., were likewise in condition similar to that observed in several of the other cases. The line of demarkation between the normal and abnormal skin of the face was quite distinct.

The chief psychic symptoms were hallucinations, delusions, disorientations, apathy, mutterings, depression, melancholia. There was a fair degree of intelligence, the patient being able to give a good statement of his illness, the various symptoms, etc. From the history given by his wife and daughter, there has, however, been gradual deterioration in all the mental processes. He grew rapidly worse, every symptom becoming aggravated, until he absolutely collapsed, dying on the afternoon of September 13th.

His case was first seen and promptly recognized by Dr. R. A. Davis, one of our assistants, as fulminating pellagra.

Case XI.—Celia J. (9187)—Admitted September 10th, 1909. Has had one child. Small, dwarfish woman, markedly emaciated.

Heart: Deep dullness, small. Apex in 4th interspace, well within mammillary line. Sounds normal.

Lungs: A small area of relative dullness in right axilla, and another over the posterior upper portion of the left chest, near the vertebral column. Roughened breathing throughout, with distant, diminished breathing over the areas of dullness.

Liver: Very small. Upper portion at bottom of the fifth intercostal space. Lower edge two inches above the costal margin in the left mammillary line.

Spleen: Very much enlarged.

Skin: Dark pigmentation; scaly, parchment-like lesions covering the entire dorsal aspects of the hands as far up as the wrist joints, extending somewhat higher on the palmar surfaces of the wrists—about two inches. No lesions on feet. On the face there is nothing save a hypertrophy of the sebaceous glands over the nose.

Complains of burning in the esophagus. Says she has had sore mouth, occasionally diarrhea, but often constipated. No history given in commitment papers, but patient says that her hands have shown changes since spring.

Mentally she is depressed, nervous, etc., looks tired, sad, and worried, never laughs, says she can't.

Cases XII, XIII and XIV.—All women. One received in 1901, one in 1904 and one in 1908. In each of these cases the physical and mental symptoms, including the skin lesion, the gastro-intestinal symptoms, etc., characteristic of pellagra, though not as pronounced as in the other cases, developed since last spring, and at this time there is evident physical and mental deterioration. They all are mute, depressed and, in fact, demented.

PATHOLOGICAL REPORT BY DR. JAMES C. BARDIN.

The study of the blood of eight cases of pellagra in the Central State Hospitaal, Petersburg, Va., has thus far disclosed nothing either diagnostic of the disease, or indicative of its cause. The counts of cells have shown that there are certain variations from the normal that are more or less constant, but none of these changes seems to be characteristic.

To obtain blood from these cases, particularly frm those far advanced, is a difficult task. Incisions have to be made with the scalpel, and even from these the blood flows feebly. In appearance the blood is thin, hydremic, fluid and usually of a light color. It tends to separate readily into its component layers, and it coagulates rapidly. In one case, which was of the acute type and died soon after the attempt was made, sufficient blood to fill the pipette for white corpuscles could not be obtained.

The red cell counts are not characteristic. The cells generally show a slight falling off in number, and the color index is always low. The counts run usually in the neighborhood of 3,500,000 cells. In one case (Augustus J.) the counts were higher (5,336,000 to 5,864,000), but the blood was dark, more viscid than normal and evidently concentrated.

The hæmoglobin is low, about 55 or 60 per cent., as an average.

The appearance of the red cells in smears varies little from the normal. Their hæmoglobin content is decreased and the cells have the so-called "punched-out" look. There is an occasional variation in size, some cells being considerably larger than normal, but none smaller have yet been seen. There are a few poikilocytes; these were particularly noted in the moribund cases. Polychromatophilia has been observed in nearly all the cases. No nucleated red cells have yet been noted.

The platelets were apparently increased in all but one case. In this they seemed to be about normal.

The leucocyte counts are generally normal. In one case there was a leucocytosis (14,000) which could not be accounted for. The other cases give counts varying from 6,040 to 9,200.

The differential counts give the most interesting results. Every case so far examined has presented a lymphocyte increase of greater or less degree, and a constant diminution in eosinophiles. The lymphocyte increase chiefly affects the large mononuclears, which, as an average, are increased to about 7 per cent. The increase is generally at the expense of the polymorphonuclear cells and the eosinophiles, the small mononuclears remaining about normal. However, the counts vary greatly in the different cases. In some the small lymphocytes are diminished, in some increased. The decrease in eosinophiles and the lymphocyte increase is the most constant change in the blood of our patients.

These results are in conformity with those of two of the reported observations noted by one writer, and at variance with one other. In Dr. Babcock's article,[1] Case 1, showed a relative increase in lymphocytes. Dr. Lavinder, in his article on *"The Etiology of Pellagra"*[2] refers to the mononuclear increase, and suggests that it is related to a similar increase in the blood of patients suffering with *trypanosomiasis*. Dr. Wood[3] reports a differential count

1 "What are Pellagra and Pellagrous Insanity, etc.?" *American Journal Insanity*, April 1909.

2 "The Etiology of Pellagra," C. H. Lavinder, M. D. *New York Medical Journal*, July 10, 1909.

3 "Pellegra in United States." Edward Jenner Wood M. D. *Journal A. M. A.*, July 24th., 1909.

"varying but little from normal." None of them speak of a decrease in eosinophiles.

As several of our cases have tuberculosis, the disturbance of the lymphocytes may be due to that disease, rather than to pellagra.

A few typical counts follow:

Case II.—Sarah C., red cells, 3,716,000 hæmoglobin; 50 per cent. white cells: 8,000; 8.20. *Differential counts;* P. M. N. 78.8 per cent; 76.5 per cent.; small lymphocytes, 12.6 per cent., 14.5 per cent.; large lymphocytes, 8.6 per cent., 7.5 per cent.; transitionals, 1.0 per cent., 1.2 per cent.; eosinophiles, 0.3 per cent., 0.5 per cent.

Mary S.—Red cells, 3,892,000: white cells, 6,040; hæmoglobin, 55 per cent. *Differential counts*: P. M. N., 63.03 per cent.; 61.2 per cent.; small lymphocytes, 20.28 per cent., 23.1 per cent.; large lymphocytes, 12.23 per cent., 11.8 per cent.; transitionals, 4.0 per cent., 2.8 per cent.; eosinophiles, 0.5 per cent., 0.1 per cent.

Hannah W.—Red cells, 4,388,000; white cells, 14,400; hæmoglobin, 65 per cent.. *Differential* counts: P. M. N., 59.4 per cent., 64.9 per cent.; small lymphocytes, 21.1 per cent., 27.7 per cent.; large lymphocytes, 7.9 per cent., 5.8 per cent.; eosinophiles. 3.5 per cent., 1. 5 per cent.

Repeated examination of the urine shows nothing definite. All the cases so far investigated have had nearly normal urines; the specific gravity is generally low; the content of sulphates is usually much increased, and that of phosphates somewhat diminished. The indican is also somewhat increased. In only one case was albumen detected (No. 2). It was found the day before death occurred in a state of severe toxæmia; the urine was very alkaline, and contained considerable albumen. Watson,[4] in his recent article on "Pellagra," considers that an alkaline urine in these patients is of grave prognostic significance.

The autopsy findings in our two cases are in accord with the reports of other observers. Our cases presented principally, a wasting of the body fat; a flabbiness and atrophy of the skeletal muscles; fatty degeneration of the heart; extreme chronic fibrous myocarditis; atrophic enteritis; pigmentation of all the abdominal viscera and the heart muscle; mild, diffuse chronic inflammation of the kidneys, and enlarged lymph glands. These lesions, in the main, are identical with those reported by others. We have not yet had a report from Dr. Flexner upon the state of the nervous system.

To summarize: The blood in our cases presents a mild secondary anæmia, a more or less constant increase in lymphocytes, and a contant diminution in eosinophiles. The urine is generally negative.

LITERATURE ON THE SUBJECT.

There is very little English literature on the subject. Among the best articles which I have read are the following:

"An Epidemic of Acute Pellagra," read before the Alabama Medical Association, in April 1907, and published in *Journal A. M. A.*—By Dr. G. H. Searcy.

A section of the annual report of the Alabama Insane Hospitals, for 1907, by Dr. J. T. Searcy, Supt.

What are Pellagra and Pellagrous Insanity? What are its Causes?—A Report made in December, 1907, to the South Carolina Board of Health, and published in the *American Journal of Insanity,* April, 1908.—By Dr. J. W. Babcock, Supt., and Staff of South Carolina Hospital for Insane.

A paper on the clinical description, report of cases, etc., read in South Carolina in September, 1908, and published in the *New York Medical Journal,* May, 1909.—By Dr. J. J. Watkins.

Proceedings of a conference of several Southern physicians, held at the South Carolina Hospital, October 29, 1908.

A paper with report of cases in the Western North Carolina Hospital at Morganton, N. C. (1909), by Dr. John McCampbell, Supt.

Pellagra—A Bulletin issued by the U. S. Public Health and Marine Hospital Service, 1908.—By Dr. C. H. Lavinder, Passed Assistant Surgeon, U. S. Public Health and Marine Hospital Service.

The etiology of the disease, published in the New York Medical Journal, July 10, 1909. By Dr. Lavinder.

The Appearance of Pellagra in the United States, published in the *Journal of the American Medical Association,* July 24, 1909. By Dr. Edward James Wood, of Wilmington, N. C.

There is now in press a treatise on Pellagra by Dr. A.Marie—English translation by Drs. C. H. Lavinder and J. W. Babcock.

4 "Pellagra." J. J. Watson, M. D., *New York Medical Journal,* May, 8th., 1909.

RELATION OF THE MEDICAL PROFESSION TO THE STATE BOARD OF HEALTH.*

By H. S. MacLEAN, M. D., Richmond, Va.

The thoughtful observer cannot but be impressed by the rapid increase in the amount of attention paid by the different States to the health of the community. The government recognizes not only that it owes to the people an intelligent supervision and control of the conditions influencing or making for good health, but that the economic value of such efforts redounds greatly to the good of both parties.

It is clearly the province and duty of the State to take steps to conserve and foster the public health along certain well recognized lines. In the furtherance of this plan, the various State Boards of Health are the natural outcome; and it is hoped that the much needed and strongly advocated National Department of Public Health will soon assume concrete form. Our own State has recently come into line in this matter, and the work planned and accomplished must commend itself to any one who will observe it carefully.

In working out the plans for the accomplishment of any scheme for public or general betterment, the duty of the individual becomes specific as the operation of the plan unfolds, and that duty of necessity is proportionate to the interest of the individual and his peculiar fitness for service under the circumstances. Too often we are apt to adopt the line of thought that government is to be administered by *others,* when, as a matter of fact, it should be, and too frequently is by negation, done by *us.* When the people, through their agents, adopt or promulgate a definite departure, movement or plan, its success and beneficent results depend upon the interest of these same people.

The medical profession of Virginia is facing just such a condition to-day. Our duty as individuals and our larger obligation as an interested class demand that we lend our earnest efforts in every proper way to the furtherance of the plans of our own State Department of Health.

Every physician has always been more or less of a missionary along educational lines as pertaining to public health in his own community. His services have been spontaneous, prompted by unselfish motives and in the face of certain financial detriment, but we know that this has never influenced him to relax his efforts to educate, caution, and protect the public. It may properly be said that to no other class or set of men has a similar proposition ever been presented. They have faced the duty of eliminating or minimizing those conditions which created the demand for their services and accorded a competency; and it is a source of gratification that our profession has met the proposition squarely, and in a manner which gives us additional pride in our chosen calling.

The State Board of Health, to a considerable extent, assumes the work hitherto self-imposed upon the profession, and by an orderly and systematic plan of campaign accomplishes much that has previously been done by the physicians. The responsibility which had come to rest upon the profession by reason of the self-appointed duties, has been, in a measure, relieved by the State's acknowledging the importance and necessity of the work previously done by the medical profession, and the justice of the State's assuming the task of its furtherance. Our duty as citizens and physicians still remains, but we owe that duty to the properly constituted State organization, and we are correspondingly relieved of that much of our duty to the community.

The work of the State Board of Health consists of the educational, preventive, and statistical features. The first two have been done in a way by the medical profession, as individuals, or through its organizations. It becomes our duty now to lend our efforts to this work; to commend it as physicians and support it as citizens. The influence of the profession will make for acceptance and hearty co-operation by the public.

A further and most valuable work of the board is the gathering of statistics and other data for present and future use. In this department the co-operation of the profession is indispensable. The State Board must rely on local boards and physicians for information upon which to base their reports, and their campaigns and results will be largely in proportion to the amount of assistance they get from the doctors. In many States this assistance is made obligatory upon the physicians by law, as the reporting of contagious or infectious diseases, epidemics, faulty or unhealthy

*Read before the Medical Society of Virginia, October 5-8, 1909, Roanoke, Va.

hygienic environment, etc.; but we should recognize that such action is in accord with our previous attitude, and we should join heartily in the efforts of the State Board. As a matter of fact, such specific co-operation is not of any material extent, requiring but a moment's time at infrequent intervals, and it should be the pleasure of every member of the profession to respond promptly to these occasional requests for information.

The Legislative Committee of the Medical Society of Virginia, of which the writer is a member, appreciates the fact that a continuation of the good efforts of the medical profession will make for them a strong argument when the physicians' license tax question is brought to the attention of the Legislature, and they urge that the members of the society give their attention and aid to matters affecting the public health, or relating to the work of the State Board of Health.

Correspondence.

An Appeal to the Medical Profession of the West and South.

Mr. Editor:—Up to the present time there has not been a concerted effort made to collect and preserve historical data in regard to the origin, evolution and personnel of our profession in this part of our country. The result of this delinquency has been the total loss of much material that should have been preserved, especially pertaining to medical schools and societies and biographical matter in connection with the practitioners and teachers of medicine of by-gone days. A good deal of material of this character is still obtainable if a systematic effort is made to locate and preserve it. It is in the hands of individuals, families, and private libraries, and will eventually be lost. *The Western Association for the Preservation of Medical Records* was organized in May, 1909, for the purpose of collecting the historical and biographical records of the profession of the West and South. We wish to preserve anything and everything pertaining to medicine and medical men and are anxious to enlist the active help and support of every member of the profession who is in sympathy with our aims. We want every one to become associated and identified with the work of our association. There are *no fees or obligations* of any kind. We have made arrangements with the Lloyd Library, Cincinnati, O., for the proper housing of the material collected. The latter will be systematically arranged, catalogued and preserved so that it can be made available for research work. We are particularly anxious to obtain—

1. Medical journals published in the West and South prior to 1880.
2. Medical books and pamphlets written or published in the West.
3. Manuscripts and autographs of early physicians.
4. Old diplomas and other documents of a medical character.
5. Proceedings of medical societies.
6. Reports of hospitals and other medical institutions.
7. Catalogues and announcements of Western and Southern medical colleges of all "schools."
8. Biographies and portraits of Western physicians.
9. Information and material of any kind pertaining to medicine and medical men and affairs in the West and South.
10. Curios of a medico-historical character.

All contributions should be sent in care of the librarian. In view of the fact that we are performing a labor of love and have no funds, our friends will readily understand why all contributions sent by express or freight should be prepaid so that no expense may accrue to the association. The necessary expenses of the association are at present being met by voluntary contributions of its organizers.

May we not count upon *your* active help and support? We want to hear from every member of the profession who is interested in the proposed work.

C. A. L. Reed, M. D., Chairman;
Otto Juettner, M. D., Secretary.

A. G. Drury, M. D., Librarian, 710 West Eighth Street, Cincinnati, O.

Adrenalin for Earache.

Two or three drops of a one-to-one-thousand solution of adrenalin—with or without cocaine—is said to give prompt relief in cases of earache.

Book Notices.

Diet in Health and Disease. By JULIUS FRIEDENWALD, M. D., Professor of Gastro-Enterology, College Physicians and Surgeons, Baltimore, and JOHN RUHRAH, M. D., Professor of Diseases of Children, College Physicians and Surgeons, Baltimore, etc. Third edition, thoroughly revised and enlarged. Philadelphia and London. W. B. Saunders Co. 1909. 8vo. 765 pages. Cloth. $4.00.

The authors have made an extremely useful book for practitioners—giving directions as to the proper feeding in special diseases as well as in health, as determined by experience and observation. The chemical composition of various daily diets, and the best way to prepare them for individual cases are given in such detail as to make the directions plain enough for the cook, etc. This book is almost invaluable to the professional nurse, as well as to the doctor. Many valuable additions have been included in this third, revised and enlarged edition. The great demand for this book has kept the price within the reach of any one needing it. Beside the systematic arrangement of Contents, the thirty-one double column pages of Index affords ready reference to a given disease and the best diet for the same.

Practical Medicine Series. Under general editorial charge of GUSTAVUS P. HEAD, M. D., Professor Laryngology and Rhinology, Chicago Post-Graduate Medical School. Volume IV—**Gynecology.** Edited by EMILIUS C. DUDLEY, A. M., M. D., Professor of Gynecology, Northwestern University Medical School, etc., and C. VON BACHELLE, M. S., M. D., Assistant Professor of Obstetrics, Chicago Polyclinic and College of Physicians and Surgeons, etc. Series 1909. Chicago. Year Book Publishers. 12 mo. 225 pages. Cloth. $1.25.

This is another of the series of ten volumes a year covering the entire field of medicine and surgery—noting the advances during the year preceding. This volume on *Gynecology* is just issued.

Manual of Diseases of the Eye. By CHARLES H. MAY, M. D., Chief of Clinic and Instructor in Ophthalmology, College Physicians and Surgeons Medical Department Columbia University, New York, etc. Sixth edition, revised, with 362 illustrations, including 22 plates, with 62 colored figures. New York. William Wood & Co. 1909. 12 mo. 391 pages. Cloth. $2.00, net

The first edition of this book was issued 1900. Reprints of several editions have been required. The present *revised* edition contains a number of alterations without material enlargement of volume. This *manual,* while giving the practical points connected with the diseases of the eye, is not intended to take the place of the more comprehensive books on the subject. It is intended rather as a guide book for students and practitioners, and well fills its purpose.

Editorial.

Medical Society of Virginia.

The fortieth annual session, held at Roanoke, October 5-8, 1909, was a most successful one. Notwithstanding attractions for crowds in various other parts of the State, the attendance was about 300. The addition to membership was over ninety, thus leaving relatively few elligible doctors in Virginia until the Medical Examining Board of Virginia issues its usual annual quota of licenses. The local Committee of Arrangements (Dr. L. G. Pedigo, chairman,) was untiring in its efforts to provide for the pleasure and comfort of visiting doctors and ladies accompanying them.

The President, Dr. Stuart McGuire, of Richmond, presided with parliamentary precision, and thus the complete program was gone through with. The papers generally were of a high order of merit, and were well discussed. Many of the papers will appear in the pages of this journal. The President's address was published in our last issue. The editor of this journal, who has also been Secretary of the society (except one year) since its organization, 1870, recognizes the special compliment shown him in said address.

The officers elected for the new year are: *President,* Dr. E. T. Brady, Abingdon; *Vice-Presidents,* Drs. W. A. Plecker, Hampton; James S. Irvin, Danville, and R. H. Whitehead, University of Virginia; *Secretary,* Dr. Landon B. Edwards, Richmond; *Treasurer,* Dr. R. M. Slaughter, Theological Seminary; *Chairman of Judiciary Committee,* Dr. Hugh M. Taylor, Richmond; of *Membership Committee,* Dr. William D. Turner, Smithfield; of *Legislative Committee,* Dr. George A. Stover, South Boston; of *Necrological Committee,* Dr. R. H. Latane, Buchanan. The *Subject for*

General Discussion, 1910, is *Arterio-Sclerosis,* divided as follows: *Etiology and Symptoms,* Dr. L. T. Royster, Norfolk, leader; *Pathology,* Dr. Henry T. Marshall, University of Virginia, leader; *Treatment,* Dr. William S. Gordon, Richmond, leader. The following *committee was appointed to re-district the State of Virginia* into fifteen districts for the purpose of selecting councillors: Drs. William F. Drewry, Petersburg, chairman; Stuart McGuire and Landon B. Edwards, Richmond.

Norfolk, Va., was chosen as the place of holding the forty-first annual session, and October 25, 26, 27, and 28, 1910, as the time.

An impression has gained currency that the remain two dollars *per capita,* though a resolution to raise dues to three dollars will have to be voted on next session.

Dr. Stuart McGuire, Richmond, Va., the retiring President, was elected an honorary member.

Both invited guests—Drs. LeGrand Guerry, of Columbia, S. C., and L. L. Lumsden (U. S. P. H. and M. H. S.), Washington, D. C., were present and read papers on subjects announced in the program, which were well received.

The following were elected as the members of the Executive Council to serve for the terms of years announced opposite each name, beginning during the latter part of the session of 1909:

First District, Dr. Clarence Porter Jones, Newport News, two years.

Second District, Dr. E. E. Feild, Norfolk, three years.

Third District, Dr. A. L. Gray, Richmond, two years.

Fourth District, Dr. S. A. Hinton, Petersburg, three years.

Fifth District, Dr. J. M. Shackelford, Martinsville, one year.

Sixth District, Dr. S. S. Gale, Roanoke, three years.

Seventh District, Dr. William P. McGuire, Winchester, one year.

Eighth District, Dr. T. C. Quick, Falls Church, one year.

Ninth District, Dr. J. T. Graham, Wytheville, three years.

Tenth District, Dr. S. H. Burton, Parnassus, two years.

Councillors-elect for State-at-Large: Drs. R. W. Fry, Roanoke, two years; Stephen Harnsberger, Catlett, three years; William Edward McGuire, Richmond, one year; M. M. Pearson, Bristol, one year, and George J. Tompkins, Lynchburg, two years.

The Executive Council organized by the reelection of Dr. William P. McGuire, Winchester, chairman, and Dr. A. L. Gray, Richmond, clerk.

The following were nominated for commission to the Governor of Virginia to represent the regular profession of the State on the *Medical Examining Board of Virginia,* each for the term of four years, to begin January, 1910:

From the State-at-Large: Drs. Rawley W. Martin, Lynchburg; R. B. James, Danville, and John G. Rennie, Petersburg.

To represent each of the Congressional Districts:

First District, Dr. J. N. Barney, Fredericksburg.

Second District, Dr. Herbert Old, Norfolk.

Third District, Dr. J. E. Warinner, Brook Hill (R. F. D., Richmond).

Fourth District, Dr. O. C. Wright, Jarratt.

Fifth District, Dr. R. S. Martin, Stuart.

Sixth District, Dr. H. W. Dew, Lynchburg.

Seventh District, Dr. P. W. Boyd, Winchester.

Eighth District, Dr. R. M. Slaughter, Theological Seminary.

Ninth District, Dr. E. T. Brady, Abingdon.

Tenth District, Dr. Robert Glasgow, Lexington.

Just after his election for the fortieth time as Secretary of the society, a most unusual, yet sincerely appreciated, ovation was shown Dr. Landon B. Edwards by the presentation of a bag of $1,000 in gold as an expression of the regard of the members of the society for him. The presentation was made in a touching address by Dr. P. A. Irving. Because of the great length of the list of contributors to the fund, the Secretary, who is also editor of this journal, knows of no other way to make known his high appreciation and thanks for so unexpected an honorarium than to express his grateful acknowledgment editorially in these pages.

Lying-In Homes for Unfortunate Women.

Beyond recognition of the fact that it seems "human to err," we would not pose as defend-

ers of criminalities. The moral wrong of illicit relationships between the sexes is as great with the male as with the female. Conventionalities, however, have led to excuses for the man and abuses for the woman.

If each party to illicit relations is equally morally wrong, it is unfair that all of the odium should fall on the woman, who more frequently has been seduced by the pleadings and promises of the man. Custom recognizes that the woman who yields to the importunities and is so found out becomes a ruined, soiled, creature in society; and when she discovers that she has been victimized, and seeing nothing but disgrace before her, she adopts all sorts of measures to "bring her courses on," thus adding another crime to the primary one. If she fails in her purpose, then she seeks the aid of some "doctor friend" or, it may be, professional abortionist—willing enough to do as asked if the exorbitant fee demanded is given. Thus feticide—if not infanticide—is added to the list of crimes.

None of us approve of the habits of the opium user, the alcoholic inebriate the cocaine fiend, etc. We know that either habit will lead to mental, moral, and social ruin, unless broken. So that we establish sanatoria for such habitues and urge parties to go promptly to them where restrictions and proper treatment may be used to cure the patients, so that they may return to their homes with new lease upon their health and able to become useful, profitable citizens.

With reference to "unfortunate women," there are being established in numerous centers suitable "homes" for them, where they may live in proper seclusion until the time of "labor" comes, be properly and scientifically attended in childbirth by competent regular practitioners at reasonable hospital costs, and the infants provided for by the authorities of the "Home," for there are any number of childless families desirous to adopt infants, and raise them as if they were their own children. After the mother recovers from the "lying-in period" she can return to her home, or else go to another place, a wiser and a better woman by reason of the self punishment she has endured. We are told by those in position to know that it is extremely seldom that a woman who has gone through such an ordeal becomes the victim of another seduction. And if common sense precautions are exercised, the woman may go into a new community to earn her daily bread by pursuing some one of the now numerous avocations open to women. Thus no crime will have been committed beyond the original one, of which she has sincerely repented, and she may become a truly reformed woman.

In this city there has been established the "Virginia Home" for such "unfortunates," where proper seclusion is assured, competent ethical professional attention at the proper time is obtainable, and the infants provided for, if so desired—all at reasonable expense. There is another such "Home" in Nashville, Tenn.—both of which are advertised in our pages and either of which, from all we can learn, may be commended to the attention of doctors having patients in need of such resorts. There can be no legal complications in sending patients to such "Homes."

If it be possible, let the principle prevail, "help to raise the fallen."

The Piedmont Medical Society

Held its last regular meeting of the year, October 16th, at Orange, Va., Dr. James T. Walker, of Barboursville, Va., presiding. The subject for discussion was "Myotonia," with Dr. W. C. Payne as leader.

Waterbury Chemical Company.

This company is due an apology for the several typographical errors which crept into their advertisement on page 8, of the last issue. In spite of their misspelled name, we are sure the firm did not fail of recognition, especially when associated with the Metabolized Cod Liver Oil Compound for which they are famous. This preparation has been found to be an excellent reconstructive tonic, which may be borne by the most delicate stomach.

Photograph of Doctors in Attendance at Roanoke Session,

Which was taken at the Elks Club Building during the recent session of the Medical Society of Virginia, may be obtained upon request by sending fifty cents to Mr. B. F. Landis, Roanoke, Va. This photograph is large sized, and neatly mounted.

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Original Communications.

DISEASES OF THE EAR COMPLICATING MEASLES AND SCARLATINA.*

By WALTER A. WELLS, M. D., Washington, D. C.
Professor of Laryngology and Otology, Georgetown University, Washington, D. C.

On numerous occasions and at frequent intervals the otologist has felt himself called upon to deliver a message drawn from his most valued experience, firmly rooted in his convictions and fraught, he believes, with much that is of interest to the general practitioner and of the deepest concern to the welfare of the race.

It is to reveal the well attested and usually acknowledged fact that the overwhelming proportion of the clientele which go to fill his consulting room dates from the attacks during childhood of one or the other of those two ever-present infectious diseases, measles and scarlatina.

It is the chronic suppurating ear, and especially of the recurrent or intermittent type, which, aside from its inherent progressively destructive action upon the organ of hearing, is the source of those dangerous intracranial complications of aural disease, such as subdural and cerebral abscesses, meningitis, and lateral sinus thrombosis.

Must we not give heed to the supreme importance of the two diseases in question when we are informed by authoritative statistics that about 12 per cent. of all cases of suppurative otitis originate in attacks of scarlatina, and 5 per cent. in measles?

According to Blau and Burke, 3 per cent. of aural affections of all kinds are attributed by patients or their friends to the antecedent occurrence of measles, and from the statistics of various authors we learn that scarlatina is accountable for a proportion ranging from 3 to 10 per cent.

The true gravity of these exanthemata is probably more forcibly brought to the minds of some persons by the contemplation of their influence upon the lamentable defect which we denominate deaf-mutism.

Dr. Holmes of Cincinnati, in a study of 500 cases of deaf mutes in the institution at Jacksonville, Ind., found 7.2 per cent. were attributed to scarlatina, while Dr. Sprague of Providence found the proportion of the Rhode Island asylum to be as high as 21 per cent.

Referring to a recently issued special report of the Census Bureau of the Blind and Deaf of the U. S. (1900), I find it contains records of 37,426 cases that are classed as total deafness. Of these no less than 23,482 are stated definitely not to be able to speak at all; so that we can say nearly three-fourths of the whole number could be justly classed as deaf mutes.

Tabulated as to causation, we find that of the 37,426 cases of total deafness, 4,145, namely 11 per cent., are attributed to scarlatina, and 953, namely 2 1-2 per cent. to measles.

The list is as follows for the chief diseases given as causes.

Scarlatina	4,145
Measles	953
Influenza	273
Malarial fever and Quinine	439
Meningitis	3,609
Brain fever	1,774
Typhoid fever	908

We therefore see scarlatina heads the list in the causation of total deafness, and would still remain a close second, even though we reckoned (as no doubt should be done) brain fever and meningitis as one and the same disease.

Measles would continue to hold third place

*Read before the Medical Society of the District of Columbia, May 12, 1909.

rated according to the number of cases which it is supposed to cause.

MEASLES.

We are indebted especially to Bezold, Toblitz and Haberman for painstaking scientific studies of the aural complications arising in the course of measles.

The post mortem investigations of Bezold and his pupils show astonishing results in this disease. It was found that in a series of 63 cases only two showed the auditory organ to be unaffected. In all the rest the tympanic cavity was filled with a purulent or muco-purulent fluid and in many cases the accessory mastoid cells were involved in the inflammatory process. Inasmuch as, clinically, no one reports a higher than 60 per cent. (Nadoleczny) aural complication, we must conclude that in many cases the aural disease is of benign type and passes off without leaving serious consequences.

According to Bezold, we have in measles two distinct forms of otitis. One, which is to be regarded as an exanthematous manifestation in the aural mucous membrane, occurs within the first three days, is symptomless in its course, and will arise and progress without its presence being suspected. The drum membrane in this class shows a marked resistance to perforation, and upon otoscopic examination, will disclose nothing characteristic or only some punctiform extravasations.

The other form of otitis develops usually in the second and third week of the disease, and is by no means so benign in its nature. Whether this form is properly attributable to the infection of the specific virus of the disease or is a secondary infection, due to the migration of pathological bacteria from the rhino-pharynx, has not been determined. We know that the mucous membrane in this disease is profoundly disturbed and that its regenerative faculties are seriously impaired. Under such conditions secondary infections cannot naturally be effectually resisted. Extension of the disease to the mastoid cells is liable to occur, and according to Moos, in some cases, the internal ear is suddenly attacked, giving rise to extreme deafness and vertigo.

Case I. I saw recently in consultation, a case of fatal intracranial disease due to suppurative otitis that occurred as late as the fourth or fifth week of the attack, and developed so very insidiously that its presence was never suspected by three or four physicians who had been in attendance. The patient, a young man about 35, son of a physician, had apparently recovered from his measles and was going about, when an edematous swelling made its appearance in the thigh, which, in the light of the subsequent course, was evidently a metastatic abscess. The temperature for some days ranged from 102 to 104 degrees F. Later the patient lapsed into a comatose condition, and stertorous breathing and other cerebral symptoms developed. There had been at no time in his illness any earache, nor mastoid symptoms, and it was only on the day that I was called in that the ear began to discharge.

The mastoid then exhibited no tenderness even upon the deepest pressure. Operation was deemed inadvisabe, and within six hours the patient died. The symptoms pointed to a pyemia of aural origin, with a possible lateral sinus thrombosis, and originating in all probability in suppurative disease of the tympanum.

Case II. Another case seen this spring, illustrating the late development of the aural complication, had a more happy termination. The patient was a male child two years old, and was first seen by me in consultation with Dr. Logan Owens. One month ago it had measles which had apparently run its course, but the child, however never seemed quite well since, but had been sick or fretful. A swelling suddenly appeared back of the ear in the the region of the mastoid. There was a history of discharging ears of some months duration which had been for a time latent, but was rekindled by the measles. On the third day after the appearance of the post-auricular swelling operation was performed, revealing external pus and a fistula already formed in the bone and connecting with the diseased antrum. Immediately after the operation, the general condition of the patient improved and the wound rapidly healed.

SCARLATINA.

Aural complications, at least in a form sufficiently pronounced to be observed clinically, is even more common in scarlatina than in measles, and we find that it tends in a larger proportion of cases to assume a malignatnt type, marked by a tendency to destructive action upon the osseous structures and the vital parts of the organ of hearing.

Bezold, in a compilation of 17,000 cases, es-

timates that aural complications occur in about 3.75 per cent. This is lower than the proportion given by most authors.

Finlayson, in a review of 4,397 cases, found that 10 per cent. had aural disease, and Caiger arrives at a proportion of 13 per cent. in a study of 1,800 cases. Sprague, who carefully watched for such complications, in the scarlet fever wards of the R. I. Hospital, found otitis in 17 per cent. of the cases. In about half of all the cases, the trouble is bilateral.

The otitis of scarlatina can be divided into three classes viz:

1. Acute serous.
2. Acute suppurative.
3. Gangrenous.

The *acute serous form* corresponds with the early form of measles; it occurs simultaneously with the eruption, is probably of exanthematous origin, and is generally benign in its course. The *acute suppurative* form occurs about the second week, and is accompanied by pain, pyrexia and considerable constitutional reaction. The drum membrane bulges markedly, and unless opened, will soon burst spontaneously, giving exit to an abundant thick, purulent discharge.

The *third type* includes the class that, by the older writers, was spoken of as diphtheritic, and even by some modern authors—including the revered master Politzer—is mistakingly regarded as an association of true diphtheria and scarlatina.

Bacteriological studies have corrected this notion and shown that the pseudo-membranous exudate is not a proof of the presence of diphtheria and that, in fact, the Klebs-Loefler bacillus is seldom present.

According to Leutert, in Schwartze's clinic, the streptococcus is the organism responsible for the virulent character of this variety of otitis.

We sometimes witness in this form of the aural complication, a rapid destruction of the bone and invasion of contiguous structures. In a few days the tympanic membrane and the ossicles may be destroyed, and the process attack the oval and round windows and invade the labyrinth. Mastoiditis is a frequent complication.

Two cases briefly related will serve to illustrate the peculiarities of the scarlatinal otitis.

Case I. Mrs. S., age 23, referred to me by Dr. L. D. Walter, was stricken about the middle of December, with scarlatina complicated with discharge from left ear. The discharge would cease at times and simultaneously there was always a return of earache.

The trouble seems to have subsided entirely, and it was not until a month later that symptoms arose pointing to a severe attack of mastoiditis. In addition to the symptoms of mastoiditis, vertigo, buzzing and intense deafness pointed to labyrinthine pressure.

The mastoid operation was performed without delay, with complete relief of the symptoms and restoration of the aural functions.

An interesting feature of the case was the recrudescence of the inflammation so long after the original infection.

Case II. Another case in which a considerable interval was interposed between the exanthematous stage and the development of a mastoiditis was that of a child seen in the contagious disease annex, connected with Garfield hospital. This case also illustrates the destructive effect of the disease upon osseous structures.

The patient, a girl of 14, was one of a family of seven, six of whom had been stricken with the same disease about the same time, one case ending fatally.

The father had recently died of tuberculosis. The attack in the present case had begun two months before the time I was called, on account of the aural disease, and the stage of desquamation had completely passed.

Both ears discharged profusely during the attack, which had been a very virulent one, but the left had now subsided. The right, in which there had been a chronic discharge of some year standing, continued to give origin to a thick, yellowish discharge that excoriated the region about the meatus. The temperature ranged from 100 to 102; the local evidences of a mastoid involvement were conclusive.

We found at the operation that not only was the entire mastoid apophysis, including the tip, necrotic, but that the disease extended an unusual distance posteriorly, involving the parietal bone. We were obliged, in order to remove all broken down bone, to uncover the lateral sinus of the brain over a considerable area. The patient's temperature fell shortly after the operation and she made an uneventful recovery.

The peculiarity which we remarked of the occasional absence of pain or other symptoms

to inform us of the presence of an existing aural inflammation in the case of measles, is similarly true of scarlatina. In both of these diseases, therefore, the indication is clear to keep ever present in the mind the possibility of a such a development which, as we have seen, may have the most serious consequence. An elevation of temperature that cannot be otherwise accounted for should excite alarm, and the possibility of its aural origin be taken into consideration.

If there be no dicharge, nor other external signs of disease, the sudden occurrence or increase of deafness, the presence of tenderness in the auricle, the observation that the little patient lies only upon one side would naturally direct attention to the ears and demand an otoscopic examination.

If a discharge is already present, either its sudden diminution or increase is quite significant in connection with an elevation of temperature, and in all suspicious cases the mastoid should be closely scrutinized and its tenderness to pressure frequently tested.

The prognosis of a suppurative otitis arising in the course of either measles or scarlatina, will depend in some measure upon the general character of the epidemic, the season of the year, the climate and upon the constitutional peculiarities of the patient

The lymphatic temperament corresponding to what was formerly spoken of as the scrofulous diathesis, and marked by enlarged cervical glands, hypertrophied tonsils and the presence of adenoid tissue in the naso-pharynx is sufficient ground for assuming an unfavorable prognosis.

Of secondary infections, the streptococcus is most to be dreaded. It is possible that it reaches the middle ear cavity by way of the Eustachian tubes, in some cases, but the hematogenous theory of infection is the one now held by most pathologists. The mastoid disease, according to the latter hypothesis, is rather to be regarded as a symptomatic expression of a profound systemic infection favored, of course, by local conditions which make for a lessened resistence.

Considering not only the immediate danger but as well the future consequence of aural disease, occurring in connection with measles and scarlatina, it is imperative that the physician in charge of the case should exercise extreme care, first, to prevent, if possible, the development of such a complication, and secondly, to mitigate its severity and hasten its cure.

Precaution in regard to the proper dress, the avoidance of draughts and the establishment of healthy elimination needs especial emphasis in view of what has been said.

The management of the local trouble should begin with the nose and throat. The throat should be sprayed several times daily with some antiseptic alkaline spray such as Dobell's. In the case of young children spraying the nose is often a difficult task to perform in a satisfactory manner. The object desired we believe can be accomplished much better by the instillation of an oily liquid into the nose by means of an eye-dropper. We would recommend for this purpose the following formula:

℞	Aristol	grs. vj
	Menthol	grs. iij
	Camphor.	grs. ij
	Ol. amyg. dulc.	oz. j

The preparation should always be slightly warmed before using.

For the ears, if the inflammation has not reached the stage of exudation, and the drum appears to be only slightly hyperemic, and the deafness slight, we may content ourselves with the local use of warm glycerine, containing two to four per cent. each of carbolic and boric acid, dropped into the canal of the ear at more or less frequent intervals.

If, however, the otoscopic examination gives us reason to suspect the presence of fluid in the tympanic cavity, and especially if the tip of the mastoid appears a little tender on pressure, no time should be lost in making a free incision of the drum membrane.

An early paracentesis is very desirable in these fevers, but it may prove a disadvantage unless every precaution is taken to prevent secondary infection, which, as we have already attempted to emphasize, is the thing very much to be dreaded.

Scrupulous antisepsis, therefore, must be insisted upon, and in this regard we should act in the premises as if a capital operation had been performed.

The discharge having set in, whether spontaneously or artificially produced, the principle by which we are to be guided is that of the industrious removal from the auditory meatus of the secretion, as fast as it emanates from the

middle ear. We do not care whether this be done by the dry or wet method. so it be well done. Our experience is that the dry method can not usually be carried out effectually, except by one accustomed to aural manipulations, and therefore we recommend irrigation as the more generally practical. Boric acid 2 to 4 per cent; bichloride of mercury 1 to 2000; permanganate of potash 1 to 1000 are the solutions most serviceable. If the secretions are thick and adherent, a 50 per cent. solution of enzymol allowed to rest in the ear for fifteen minutes before the irrigation will prove helpful.

The use once daily of a 5 per cent. solution of resorcin in alcohol (60 per cent.) is indicated in the type of inflammation occurring in scarlatina which we classed as phlegmonous.

If mastoiditis is undoubtedly present, operation should be performed without delay, unless its occurrence coincide with height of the desquamative stage. Operation at this precise time, if possible, should be avoided as experience shows the progress to be less favorable than when the operation is performed either before or after this period.

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PELLAGRA AND CLINICAL OBSERVATION OF TWO CASES.*

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It is with a degree of reluctance that I make my first appearance before this distinguished society on a subject in which I have had so little experience and about which so little is known; but from the various reports throughout the country within the past year or two and careful study of other literature on the subject, I am convinced that we are confronted by a malady serious in its nature, endemic and epidemic, and in the light of our present knowledge, uncontrollable in its progress. This paper is not intended as a thesis on pellagra, and my knowledge is so meagre on the subject that I would not even attempt to theorize as to its causation, but for the purpose of study and as an introduction to the cases which I shall report, I have deduced from various authors the following:

History. It seems that the earliest history of the disease dates back to 1730, when Casal, of Spain, called the condition *Mal de la rosa.* Among other names under which it was described were those of lepra asturiences, lepra scorbutica and Mal de la Miscera. In 1750 it is said to have made its first appearance in Italy, though Frappoli, in 1771, was the first to apply the name pellagra, Italian (pelle, skin, and agra, rough). In 1784 the disease had attracted so much attention that a hospital was established under royal authority for the purpose of studying its nature. In 1810 Marzari first observed the relation between maize and pellagra. In 1844 Balardini advanced the theory that pellagra was probably due to maize which had developed a greenish fungous growth on the grain. Because of this greenish tinge the "Verdet theory," which Lombroso so ably defended, was applied to the view of Balardini. In 1826 Marchand reported the presence of the disease in Southern France. In 1845 Roussel established the identity of pellagra with the numerous foregoing names. He upheld the "Verdet theory," and differentiated pseudo-pellagra. Pellagra existed in many parts of the world and is still a "death dealing pestilence" in Europe.

As in Europe, it may have existed in America unrecognized for years. Statisticians are at variance, both as to the time pellagra was first recognized in the United States and to whom belongs the credit of first making a diagnosis. Dr. G. H. Searcy, of Alabama, reported in 1907 the first positive case in this country. He reported an epidemic of eighty-eight cases occurring in the State Hospital for Colored Insane at Mount Vernon, of which number fifty-seven died. Dr. Babcock, of South Carolina, who visited Italy in 1908 for the purpose of studying the disease, identified it with Italian pellagra. Since that time the South Carolina Board of Health, with the cooperation of the United States Marine Hospital Service, has been most energetic in its investigation. Passed Assistant Surgeon C. H. Lavinder is now detailed by the Government to do research work as to its etiology and treatment.

Etiology. The thories that confounded pellagra with syphilis, alcoholism, ervsipelas, leprosy, and eczema have been abandoned. Dr. Babcock, quoting Tuczek says, in part, that pellagra is due to certain toxic substances developed in the course of the decomposition of Indian corn. "The corn cut before it is ripe, stored away in damp seasons, sown from

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affected seed contribute to the engendering of some toxic development in the grain which forms the true pellagrous poison." Why Spain should have been affected by this scourge in 1700, while America, where corn was cultivated before the time of Columbus, should have escaped, was probably due to climatic conditions and method of harvesting. Balardini believed it to be due to a parasitic growth on mouldy corn, while Lombroso considers it due to some toxic substance in corn as a *result* of parasitic growth. Tizzoni states in his monogram, which is the most recent bacteriological report on the disease, that he has cultivated an organism closely resembling the diplococcus of pneumonia, but which is not a coccus but a bacillus. This organism occurs in chains, and to it he has given the name "streptobacillus of pellagra." When this bacillus was injected into animals a condition resulted which was true pellagra. This germ resists the temperature of 90 degrees C. It has not yet been determined whether this organism exists in other foodstuffs than corn. It appears that the "strepto-bacillus pellagræ" forms an antitoxin and this antitoxin cures pellagra. The theory that the disease is a parasitic one and that the parasite selects corn as its host is a popular one. Dr. E. J. Wood, of Wilmington, N. C., who is doing research work along these lines, may shortly have something of interest to report. C. H. Lavinder, in a recent article on "Etiology of Pellagra" concludes in substance: "That the cause of pellagra is essentially unknown. That the idea of etiological relation between pellagra and the use of corn as a food is as old as the disease itself and should not be cast aside, yet it would seem unwise to hold such views so dogmatically as to exclude investigation along other suggestive lines."

Definition and Symptoms. Van Harlingen comprehensively defines pellagra as a complex disease characterized by three classes of symptoms. First, a squamous erythema confined to those portions of the skin which are exposed to heat and light. Second, a chronic inflammatory condition of the digestive passages shown chiefly by obstinate diarrhea. Third, a more or less severe lesion of the nervous system leading at times to a mental alienation and paralysis.

These characteristic symptoms, at first insignificant but periodic, begin in the early spring and diminish with the approach of winter. An aggravated acute attack may terminate fatally within a few months. For the purpose of description some authors divide the symptoms into three stages. Such a division appears more theoretical than practical.

The prodromal symptoms begin, as a rule, in early spring. They are manifested by occipital headache, vertigo, lassitude, indigestion, and constipation or diarrhea. The appetite is variable; it may either fail or become voracious. The mucous membrane becomes reddened and ulcerated; the tongue is red and swollen; occasionally ptyalism is present and it is with difficulty that the patient swallows. Nausea and vomiting may be prominent; emaciation with muscular weakness soon appears. Shortly there appears an erythematous condition of those parts of the skin exposed to sun and light such as portions of the face, back of the hands and forearms, dorsal surface of the feet and the back of the neck extending in a rather V-shape towards the epigastrium. The cutaneous phenomena consist of, first, congestion or erythema, with or without, vesicles and bullæ, to which is added thickening, scaliness, and pigmentation with a subsequent atrophic thinning. The skin frequently becomes cracked and fissured, or the condition may resemble a severe scald over which forms silvery scales with exfoliation.

The reflexes may be either increased or diminished; again they vary on different sides The eye symptoms are variable. The temperature is not significant. The heart and kidneys may become affected and should be watched. The blood shows considerable anemia with lymphocytosis.

The mental symptoms are marked by depression, insomnia, hallucinations and delusions which usually terminate in dementia. As the disease progresses, these symptoms become greatly exaggerated until autumn, when they subside or disappear, only to return the following spring. This condition may continue for years, but finally results fatally. A severe acute attack may be more rapid in its evolution and terminate fatally within a few weeks or months, the patient dying in a state of delirium.

Pathology. With the exception of fatty degeneration and sclerosis, the changes in the brain are usually negative. In the cord, both the posterior and lateral columns have been found degenerated. The intestinal tract inva-

riably shows pigmentation, ulceration, and atrophy. Fatty degeneration and atrophy of the heart, lungs, kidneys, liver and spleen are fairly constant.

Diagnosis. The diagnosis of a typical case of pellagra, with its triad of symptoms—symmetrical erythema of the exposed surfaces of the skin, stomatitis and diarrhea with disturbance of the nervous system—should offer little difficulty. Occasionally some of the symptoms may be absent but a careful investigation as to the history will usually disclose evidence of their previous existence.

Pellagra-Sine-Pellagra. This seems to be a form of pellagra in which skin lesions are absent. Dr. Wood says that it is a misnomer, and that in all these cases, at one time or another, there have been definite skin lesions of pellagra, though they may have been insignificant. His cases were characterized by stomatitis and diarrhea with nervous and mental symptoms. In every case the patient was melancholy. Some writer has defined it as a "parenchymatous degeneration of the nervous system."

Pseudo-Pellagra. Of the many conditions that might be confounded with this term are: Simple solar erythemas, alcoholics with peripheral neuritis, cases of dementia, and general paralytics, though paresis does not present the characteristic skin and intestinal lesions of pellagra.

Prognosis. The outlook is usually serious. A severe acute attack, in spite of treatment, runs a rapidly fatal course. Chronic cases of not more than one or two years' standing, will as a rule, respond to treatment for awhile. Authorities of other countries give as an average duration of the disease five years, though many cases continue for ten or fifteen years. In America the disease has not existed long enough to form an intelligent estimate. Dr. Wood mentions three years as the longest duration of the disease in his experience. One of the writer's cases gives a clear history of six years' standing.

Treatment. Hygienic and preventive treatment consist in placing the patient in healthy and pleasant surroundings and improving the diet. The latter should be free from maize and its products. Corn should be thoroughly matured before harvesting and stored in dry airy bins. Medical treatment, unfortunately, promises little. There is no specific remedy. From our present knowledge symptomatic treatment—such as opium, arsenic, iron, quinine, strychnine—exerts the most favorable influence upon the disease. Very flattering results are claimed by many from the use of atoxyl, while others consider it of no value. The early preparation of a curative serum is a consummation devoutly looked for.

REPORT OF CASES.

Case I. History obtained from son and commitment papers. Family history, negative. Personal history: J. K., white; male; Virginian; age 55; farmer; education fair; married, with several children, all of whom are healthy. Patient has lived in the country all of his life; early habits regular; ate largely of corn. In the spring of 1902 his health began to fail; showed indisposition to work; suffered with headache and vague pains throughout the body; intermittent diarrhea; slight reddening of back of hands, forehead and neck; insomnia developed, followed by train of mental symptoms, refusing to see his best friends; claimed he was lost and failing to recognize family; committed to Southwestern State Hospital in 1903. Diagnosis: Melancholia; discharged in a few months as recovered. Each succeeding spring brought a return of the symptoms, the physical predominating—diarrhea and skin lesions with increased severity. Moved to Prince George county, Eastern Virginia, in 1906. Drank heavily a part of 1907. With the exception of a slight mental depression the symptoms cleared up during the winter. In the early spring of 1909 the trouble reappeared in a greatly exaggerated form.

Admitted to the Eastern State Hospital, July 26, 1909. Upon admission examination showed the following:

Nervous and Mental Symptoms: Speech slow but slurring; unsteady gait; Romberg symptom; Argyll-Robertson pupil; patella reflexes diminished. Patient said he slept but little. There was marked depression with some irritability. He was apprehensive, though had but little insight into his condition and showed defective judgment.

Physical Symptoms. Somewhat emaciated; musculature was in poor tone; epitrochlea glands enlarged; complained of pain in rectum, and at times in breast, bones and joints.

Circulatory System. Slight mitral lesion; pulse, 95, small and irregular; arteries somewhat atheromatous.

Respiratory System. Negative.

Alimentary System. Tongue coated; breath offensive; appetite poor; stomach, liver and spleen showed nothing of interest; slight serous diarrhea.

Skin. The skin over forehead was very red and rough. The back of the neck and supra-scapular regions were red and indurated, and to a certain extent extending around the neck. The back of the hands extending from the junction of the first and second joint of the fingers to a point about one inch above the styloid process of the ulna, showed dry, furred scales, beneath which the skin was dark red. The dorsal surface of the forearms presented the appearance that the skin would show about two days after a superficial scald.

Course of the Disease. For the first week his condition remained about the same as upon admission. The diarrhea became worse and not amendable to treatment. Salivation also began about this time. The tongue became red and slightly swollen. These conditions gradually grew worse, and at the beginning of the third week after admission nausea and vomiting set in, at the same time the reddened tongue became denuded. The skin condition on the back of the neck and supra-scapular regions gradually cleared up during this and the preceding week and the skin over the chest and elbow began to show involvement. The perineal region became red and edematous. During the fourth week conditions remained practically the same as third week with added loss of appetite—the patient refusing food, but craved acids, which he refused when offered him. At the beginning of the fifth week the involvement of the skin over the breast, which began about the middle of the fourth week, became more prominent, and by the end of this week it involved the supraclavicular regions, having a triangular shape, the base of the triangle being formed by the clavicles with the apex extending to the epigrastric notch. While this was the area involved it did not show a well defined line of demarcation until the latter part of the week and the beginning of the sixth week. The skin on his forearms during this time had become dry and scaly. Physical decline and general weakness was more rapid during the last few days of this week. At the beginning of the sixth week the skin condition over chest showed a line of well marked demarcation, the skin being thickened, pigmented and somewhat roughened. The diarrheal condition remained unchanged. He became so weak that he was unable to raise himself in bed. Tongue remained red and denuded. About this time the patient began to show marked dementia which became continuously pronounced. The perineal condition improved, while the other skin conditions remained as last stated. At this time he was taking nourishment somewhat better.

On the morning of the thirty-eighth day he had a mild convulsion, pupils becoming irregular, dilating and contracting alternately without any external stimuli. This phenomenon was irregular in its behavior—one eye contracting while the other dilated or remained inactive. The condition is one which, so far as I have been able to find, is not recorded by any writer on the subject. During that afternoon the patient was, at times, excited. The next day he began showing hallucinations, both auditory and visual, also expressing some few delusions. Patient continued in a delirious condition through this and the next day, dying at 3:45 o'clock the following morning.

Repeated urinary examinations showed acid reaction, specific gravity varying from 1017 to 1020, indican, few epithelial cells and an occasional hyaline cast. Examination of feces showed no evidence of hookworm. Several blood counts made during the third and fourth weeks showed polynuclear neutrophiles, 88 per cent.; lymphocytes, 12 per cent.; large mononuclear, 4 per cent.; transitional, 3 per cent.; polynuclear eosinophiles, absent; mast cells, 2.5 per cent.

Case II. (Moist variety). R. D., white; age, 33; Virginian. Very little history can be secured of the patient since his admission into the hospital nine years ago. He would sit around in the ward and porches, having little or nothing to say.

Clinical History. The present attack began early in July, 1909, at which time the feet were slightly swollen, the dorsal surfaces of which became covered with vesicles and bullæ from one-quarter to one-half inch in diameter. These soon ruptured, leaving the skin perfectly raw. Treatment had but little effect. The swelling subsided. Gradually soft scales formed over the denuded surface. These scales

finally came away, leaving the skin soft and dark red in color, the color disappearing upon pressure. Within a few more weeks the skin began to peel, leaving the surface smooth and reddish pink in appearance. The back of the hands and wrists underwent the same changes as the feet, except the condition there was more rapid in its evolution and there was no secondary peeling. The forehead, as in the beginning, remains rough and parchment like. The elbows and portions of the shoulders at one time showed pigmentation. Synchronously with the skin lesions there was intermittent diarrhea, and at times, refusal of food and medicine; the abdomen was tympanitic; the gums sore and bleeding, with increased flow of saliva. The reflexes were exaggerated; the pupils responded to accommodation but not to light, nystagmus marked at times. Heart and lungs normal. When sitting up the patient invariably bends forward and gazes into space with a vacant stare. He is depressed, mute, delusional, untidy in habits and demented. The physical improvement in this man may prove permanent, but I am inclined to believe it only a remission in the disease which will eventually recur.

I have under observation four other very suspicious male cases. There is only one female caes reported in the hospital, which would suggest an exception to the rule that females are affected more often than males.

While I do not wish to appear unduly alarmed, I desire, in conclusion, to urge upon the medical profession in the State the importance of an early recognition of this disease and a prompt report of all cases to the State Board of Health, or to a *special committee* appointed for the purpose of scientific investigation as to its cause, prevention, and treatment.

I wish to make grateful acknowledgement for many courtesies of Drs. Conrad and Roache in the preparation of this paper.

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Many dictionaries, encyclopedias and text-books on the skin give some description of the disease.

BACTERIA IN THE CIRCULATING BLOOD, WITH DESCRIPTION OF TECHNIC FOR DEMONSTRATION BY STAINING METHODS.*

By M. P. BURNHAM, M. D., Harrisonburg, Va.

In the study of the blood many advances have been made during the past decade. As a result of perfected methods in blood culture technic, supplemented by animal inoculation experiments, nearly all of the acute infections have been proven to be true bacteriemias.

The vegetable pathogenic microörganisms, as a class termed bacteria, have, heretofore, been studied by the use of cultural methods and animal inoculation tests exclusively. Staining methods in the past have not been found applicable to the study of the bacteria in the blood. By the use of cultural methods the characteristic bacterium has been isolated from the blood in the following diseases: Typhoid and paratyphoid fevers, pneumococcus infections, gonorrheal sepsis, acute tuberculosis, malignant endocarditis, cerebro-spinal fever, bubonic plague, glanders, anthrax, cholera, Malta fever and in the various septicemias due to the pyogenic cocci.

The animal pathogenic microörganism, the protozoa, are, from the nature of their life history, not suited to culture study. The protozoa, causing trypanosomiasis and the spirochete pallida found associated with syphilis, have both been cultured by certain observers. As an aid to diagnosis this culture work has been of little value, and for the demonstration of the protozoa in the blood, staining technic has been relied upon. Malaria offers the best known example, and in trichiniasis, trypanosomiasis, filariasis and syphilis the protozoa have been demonstrated in the blood by stains.

Briefly, I wish to consider these two

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methods of study of the blood, not from the standpoint of the bacteriologist, but from that of value as practical diagnostic aids in the hands of the physician doing general work.

At this time the bacteria are the best known and most important infective agents. But, in two diseases only—of the considerable number of diseases known to contain in the circulating blood the microörganism causing them—has the use of a culture technic furnished a routinely applicable diagnostic test of importance, viz., typhoid and paratyphoid fever. In the other above mentioned bacteriemias, results of cultures as now made are far more apt to give negative results than otherwise. In typhoid fever fully 95 per cent. of all cases give positive cultures, and that in the early days of the disease when of the greatest diagnostic value. Why are not similar results obtained in the other diseases in which the bacterium has been isolated from the blood? Mainly to the following factors are negative results in culture work to be attributed: Unsuitable culture media, imperfect technic in one of the many requisites, too few bacteria in the amount of blood used, some of which are dead and others dying, and, lastly, to the bactericidal action of the blood itself. The negative culture is the bugbear of the laboratory investigator today.

Considered now from the standpoint of general applicability, the use of cultural methods offers even greater obstacles than those met in their application to the study of disease. In medical centers only, where the facilities found in a fully equipped laboratory are available as well as trained investigators, can the work be carried on. As personal contact of patient and investigator is, in nearly every instance, necessary, the narrow influences of culture studies can be easily appreciated. The larger percentage of our population being in the rural communities, the general practitioner working among them, mainly removed from medical centers, gets little assistance from the work this day and time.

Staining methods of study on the other hand are far more simple of application and generally give less positive data. For their successful use is demanded either a microorganism having definite morphological characteristics, or one taking a particular staining reaction. The various protozoa fulfill these requirements. The bacteria do in a few instances also.

The employment of stains for demonstration of bacteria in the blood is open to every man who has a microscope and a desire for accurate information. No expensive equipment or high technical knowledge is required; neither is any amount of time required in making the observations.

The use of stains offers one material advantage over that of culture methods in that it allows of morphological study of bacteria as they appear in the blood unaltered by growth under artificial conditions.

The search of centrifugalized laked blood for bacteria is one of the older laboratory procedures which has fallen into disuse until the past twelve months. Herrick and Janeway demonstrated in April this year the presence in the circulating blood of the ova of the trichina spiralis. Rosenberger, Forsyth and others have reported the finding of tubercle bacilli in the blood of many cases. Burnham and Lyons reported in May the finding of typhoid bacilli in the blood, but failed to confirm the work of those men who had found the tubercle bacilli in the blood.

The technic which we found in our work to be the simplest, as well as the most uniformly satisfactory, is given below. Many different methods were tried out, but for one reason or another were discarded. One to five c. c. of blood was used in our work and taken from a vein in the arm or from one on the dorsum of the foot by means of an ordinary hypodermic syringe having a capacity of at least 5 c. c. In some of our work blood was taken from the ear after a deep stab with lancet, either by use of a pipette or by dropping direct on to a glasss slide.

The field in every case was carefully prepared to exclude surface contaminations. Thorough scrubbing with soap and water is followed by a saturated solution of bichloride of mercury which is removed by free use of 95 per cent. alcohol. The blood withdrawn is immediately transferred to a 1 1-2 per cent. solution of sodium citrate in normal salt solution to prevent the occurrence of coagulation. This blood-citrate solution was centrifuged for ten minutes at a moderate speed. The sediment thus obtained was placed on clean slides and dried by moderate heat. In this work it is

absolutely necessary to prevent contamination from any source. To clean slides perfectly, use soap and water first and then place in commercial nitric acid and allow to remain for twenty-four hours. Rinse in distilled water and bring to red heat in a Bunsen flame. This removes all matter from the slides. From the dried, thick smear of blood it is now necessary to get rid of the blood pigment. The presence of this pigment in the erythrocytes makes it impossible to apply any stain that will show such small bodies as bacteria in the film. Several methods of removing this pigment have been used by different investigators, but the one we found to give the best results—although a somewhat slow one—was the use of distilled water into which the slide was placed and allowed to remain three hours. On removal, practically all of the pigment is found to have been dissolved and passed into solution. Care in using distilled water for laking as well as for the making of the citrate solution is necessary to prevent contaminations. The water, if allowed to stand, we found almost uniformly to contain vibrio and acid fast bacilli. To prevent contamination from this source it is necessary to use containers that have been cleaned in strong mineral acids and to take the water direct from the still. After the laking process, the slides are allowed to dry, and are then stained, the stain used being the one best adapted for the demonstration of the organism sought for. The entire procedure can be carried out in twenty minutes, excepting that period of three hours when the spread is being laked.

By this technic ten cases of typhoid, five cases of pneumonia and ten cases of pulmonary tuberculosis were studied. In all cases from six to twenty slides were made and examined.

In the ten cases of typhoid studied we found in six a Gram negative bacillus resembling the typhoid bacillus morphologically. These all gave positive cultures. Of the four cases in which we failed to demonstrate any microorganism in the blood, all were examined late in the disease. Two only gave positive cultures. In three of the cases in which we were able to demonstrate the gram negative bacillus, we also found them in spreads of blood made direct from the ear and no use of citrate solution was made.

While this is too small a number of cases to draw definite conclusions from, I am inclined to believe that this technic will afford us a method as valuable as staining methods now used in demonstrating the malarial parasite. No diagnosis between typhoid and paratyphoid fevers will be possible by use of stains. A thorough search of the literature has failed to show any results, such as reported here in this disease.

In the five cases of pneumonia studied by this technic no diplococci were found. It is, however, probable that the blood used was taken too late in the disease and did not have the cocci present. In two of the cases the blood was examined on the fifth day; in two on the sixth day, and one on the seventh. Blood cultures made in two of these cases gave negative results. Blood from the ear was used in four cases, and from the vein in one. In pneumonia, blood should be examined in the early stages of the disease and not less than 5 c. c. should be withdrawn from a vein. I believe different results will be obtained under these conditions than we met with.

In the ten cases of pulmonary tuberculosis studied by a technic in the main similar to that above described, entirely negative results were obtained. These cases were in various stages of the disease and all had tubercle bacilli in the sputum. Five c. c. of blood was used in every case, and many slides in each patient examined with failure to show one tubercle bacillus. The tubercle bacillus having a definite staining reaction offered favorable conditions for demonstration if present in the blood. I have had no opportunity to use the technic in the acute forms of the disease. It is only in these acute tubercle processes that culture work has demonstrated the presence of the bacillus in the blood.

By accident, two cases of malaria were studied by this technic, and by the use of the Gram stain the pigment of the protozoa was seen under the microscope as small areas of granular matter taking a yellowish brown stain, and in quite a distinctive manner. Had we not a better way of demonstrating the protozoa, this technic would be of value.

In concluding, I want to state that this is not a method now employed in clinical laboratories routinely. From the limited amount of experience I have had in the use of it no definite conclusions can be drawn, but I believe it has great worth. It gives to the practicing physi-

cian means to investigate the blood for the presence of bacteria which, heretofore, by reason of the complicated technic of cultural methods, he could not avail himself of.

Great vigilance is to be observed in excluding contaminating micro-organisms from external sources. Already some published reports of investigations made using this technic seem to be open to criticism on account of faulty methods in this regard.

Definite data are greatly needed concerning the presence of the bacteria in the blood, as well as to their life history while here. The invasion of the blood stream in various diseases, and in what numbers, are interesting questions concerning which we are at a loss for information. Upon the presence in the blood, their numbers, and their history while circulating in the general blood stream, depend many of the questions concerning immunity in its various phases, the explanation of which is awaiting solution. Methods of treatment are likewise dependent for their proper application upon these factors largely. Study of the bacteria in the stained film cannot fail to give data upon these points.

SOME ADDITIONAL REMARKS ON CLUB-FOOT.*

By PEYTON GREEN, M. D., Wytheville, Va.

At the meeting of this society in April, 1903, I read the following paper under the title of "Two Cases of Clubfoot Associated with Maternal Impressions."

In calling your attention to these cases, I shall not enter into a discussion of the subject of maternal impressions, but will merely state the facts as they occurred, and leave you to draw your own conclusions.

Bettie B., the mother is 36 years old in good health, very large and muscular and of rather less than average inteligence. She is illiterate, superstitious, very prejudiced in her opinions and believes in signs and omens.

Until recently she has been for a long time an inmate of the Wythe county poor house. She has no prysical disability, but because of her frequent confinements, a surly disposition and an inherent laziness, she has not been able to get a positon as servant or, having secured one, to reain it. Consequently, she has been a public charge for a number of years. Some eight to ten years ago she contracted syphlis from which she seems to have entirely recovered. She has had seven children, with probably as many different fathers. There are four boys and three girls, and their ages range from 16 years to 9 months. The first four children have no unusual histories. The fifth child, a girl, had a rising in her head, and is now deaf and dumb. The sixth child, a boy, was born with an exaggerated case of talipes equino-varus of each foot—in fact, the most extreme case which I have ever observed.

I hand you for your inspection a photograph taken when he was nearly two years old. At that time he was a hopeless cripple. In his efforts to stand erect by pulling himself up by a chair or other pieces of furniture the external malleoli had become inflamed and each was covered with a sore about the size of a half dollar. The boy was born in June, 1898, and I operated upon him in May, 1900. Each tendo Achilles was severed subcutaneously, and then the inner aspect of each foot was incised down to the bones and the tendons and plantar fascia divided. The feet were then forcibly manipulated and put into a position of extreme abduction. They were held in this position, a piece of sterilized rubber placed over the wound, the foot wrapped in sterile gauze and a plaster of Paris bandage applied and left on for several weeks. When, however, the bandages were removed, it was found that in spite of the extreme-force used in manipulating the feet, the deformity still persisted to some extent. The operation was repeated in July. The bandages were removed in three weeks and the result found to be perfectly satisfactory. A pair of clubfoot shoes

*Read before the Southwest Virginia Medical Society, Marion, Va., May 27-28, 1909.

were fitted to the patient and worn for about five months. Then they were left off, because the boy complained that they hurt his feet, and because the mother was too lazy and indifferent

to make him wear them. The second photograph, which I now hand you, was taken in August, 1902, a little over two years after the second operation. This child can now walk flat-footed and wears an ordinary pair of shoes with no inconveniene whatever.

The seventh child, a girl, was born about the 1st of July, 1902. I had hoped to be able to show you her photograph at this time, but her mother is now in West Virginia and I was unable to secure the photograph for this occasion. However I will remark that she has talipes equino varus of each foot fully as marked as that of her brother. I hope within a few months to operate upon this case also. When about four months advanced in her gestation—with the clubfooted boy—the mother, who was then at the poor-house, was given a live turtle to kill and clean for the cook. She did so, but for a long time she could not keep from thinking of it, and finally she became imbued with the idea that her child would be born with feet and hands like the feet of a turtle. When she was delivered her first question was as to whether the feet were all right.

About sixteen months after her child was operated upon she became pregnant again, and during her entire gestation she was harassed with the fear that her baby would be marked like the one preceding it. I regret to say that her fears have been fully realized, and that the little girl's case of clubfoot is almost an exact reproduction of the case of her brother.

There is no history of heredity in either case.

In the latter part of May, 1908, the little girl was sent to me from an adjoining county for treatment. She was then about six years old and an inmate of the almshouse, her mother having died when she was three years old. The photograph which I hand you will give you a very clear idea of the extent of her deformity at that time. She had learned to walk on the sides of her feet, and as a result of this, there was marked displacement of the bones. The skin had become indurated and thickened like that of the soles of the feet, and I do not think I exaggerate in saying it was a quarter of an

inch thick over the external malleoli. After a preparatory treatment of a few days, she was operated upon, under chloroform, about the first of June. As in the case of the boy, the Phelps, or open method, was the one selected for this case. Because of her age, the operation was more difficult and tedious and less promising of results than the one upon her brother. The sooner these cases come under the care of the surgeon the more hopeful the cure. The longer duration of the condition and the unnatural position assumed in walking had greatly exaggerated the deformity. After a subcutaneous division of the tendo Achillis of each foot, an incision was made to the bones dividing the tendons of the tibialis posticus, the flexor longus digitorium and the flexor longus pollicis. The bodies of the flexor brevis digitorium and the abductor hallucis, the plantar fascia, ligaments and nerves, and, in the right foot, the internal plantar artery. The almost uniform success of this operation is due to the section of absolutely all the tissues down to the bones, thus en-

abling the operator to put the foot into a position of extreme abduction and over-correction. Considerable force had to be used in tearing apart the bones, and no little annoyance was experienced in the after treatment, at all times trying, and in this case particularly so because of the lack of training in this little poorhouse waif. A pair of clubfoot shoes were fitted to her in July, and in August she was sent to the country where she remained during my absence from home, until December. She was then able to wear a pair of ordinary shoes, and she is now an inmate of the Children's Home in Richmond. In a short while she will be adopted into some respectable family, just as her brother was six years ago.

I call your attention to these cases for two reasons: First, because of the pessimistic views entertained by the general practitioner as to the results in the treatment of this deformity. When I operated upon the boy, one of my assistants remarked that the operation was useless as the deformity would return; and when his case was reported six years ago, a distinguished member of this Society made the same remark. But the deformity has not returned, nor will it do so if the case is properly treated and attended to after the operation. I contend that this open method of treatment is a certain cure for clubfoot in very young children.

Another reason for reporting these cases is that I think a case of clubfoot is a stigma upon the medical profession in the community in which it exists. If the parents have the means, they will see that the child is operated upon; and if they are pecuniarly unable to do so, then it should be the privilege and the duty of the medical men to see that these, otherwise hope less little cripples, are operated upon and enabled to grow up strong and sturdy men and women.

SAFETY PIN IN TONSIL—REPORT OF CASE.*

By JAMES A. GRIZZARD, M. D., Drewryville, Va.

On the 23rd of August, 1909, I received a 'phone message to come at once to see a white child, about two and a half years old, who had swallowed a safety pin. I reached the home in about one hour after I received the message; found the mother very much excited and walking up and down the floor with the child.

I had the father to take the child on his lap and using a mouth-gag to keep the patient's mouth open, with the aid of a tongue depressor I looked down the child's throat. Then it was seen that the tonsils were much enlarged and the safety pin had pierced the left tonsil and was fastened. I took a pair of long forceps and had very little trouble unfastening and removing it.

I had some hemorrhage afterwards, but controlled it with adrenalin solution.

The only way I can account for the pin being fastened was the spring was very weak, and the excited mother, trying to remove it. pushed it through the tonsil and fastened it accidentally, or it is possible that as the child had been eating an apple that may in some way have been the cause.

Proceedings of Societies, Etc.

NORTHWESTERN MEDICAL SOCIETY OF PHILADELPHIA.

Regular meeting held June 14, 1909. The president, Dr. Clarence P. Franklin, in the chair. Mrs. M. C. Repp, reporter.

Cuguillere's Serum in the Treatment of Bone Tuberculosis.

Dr. C. H. Muschlitz: I have treated six cases of joint tuberculosis by Cuguillere's serum. The number of injections ranged from 8 to 14 and the dosage from 2. 1-2 to 5 c. c. weekly. All the patients, excepting one, which died shortly after the first injection, showed general improvement for the first few weeks, their appetites increasing and the discharges from the sinuses slightly decreasing. The

*Reported to the Southside Virginia Medical Association, at Courtland, Va., September 14, 1909.

patients did not have the advantage of outdoor life, but had a diet of milk and eggs during the entire course. Neither traction nor braces were used except in one case of Pott's disease with palsy. The improvement in these cases, the author believes, is due not to any specific influence on the bacillus tuberculosis, but due to the tonic influene of the serum. After the first few injections these patients failed to show any progress. The serum is composed of allylum sulphide, 1 gm.; tincture of myrrh, 1 gm.; Hayen's glycerinated serum, 100 gm. It is a light yellow fluid about the consistency of syrup, having a strong odor of garlic and produces a burning sensation when injected beneath the skin. It is carried in small glass tubes of about 5 c. c. capacity. The dose ranges in the human organism from 2 1-2 c. c. minimum to 15 c. c. maximum. According to Cuguillere it depends upon organic sulphur for its active principle.

Importance of Early Diagnosis of Bone Tuberculosis.

Dr. A. J. Davidson: Rarely does the orthopedic surgeon have the opportunity of seeing the starting point of the diseases that are so often referred to him for treatment. Especially rarely is he called to see a patient suffering from bone or joint tuberculosis when the very first symptoms present themselves; this being the time of greatest importance—the time when treatment is most efficient, when the disease is most easily checked, and when much suffering and unsightly deformity can be prevented.

Is it not the family doctor, the general practitioner, who is first called to see the patient? Is it not he who sees the disease in its incipient stage, and is it not he who should be most impressed by the great importance of its earliest recognition? It was with this view in mind that this paper was prepared as an appeal to the general practitioner, that he may not overlook such seemingly trivial symptoms as night cries, so-called "growing pains," stomach-ache, and many other apparently unassuming evidences of such an important disease; and that the presence of these symptoms may be conducive to more critical examinations and more exacting observations so as to exclude, among other affections, bone tuberculosis.

The extreme importance of this subject can be appreciated only by one who daily comes in contact with the miserable examples of a "too-late" diagnosis and a neglected treatment. The shortened limb, the stiffened and distorted hip, and the hunched back all could have been prevented had the disease been recognized in its incipiency.

Tuberculosis of bone and joint is preeminently a disease of childhood. It is not congenital and is uncommon under one year of age. It is most common between the ages of three and ten, but may occur at any age. Sex is not a prominent factor, but boys are slightly more often affected than girls. Any joint in the body may be affected.

From one-sixth to one-half of all cases appearing in collected statistics would seem to have a traumatic origin. Tre most recent statistics, based upon a knowledge of modern pathology, tend to remove the traumatic factor in the etiology. There is no doubt in the mind of the writer that the element of trauma in the older statistics is greatly exaggerated.

It is a matter of frequent observation that children whose family history is exceptionally good become affected with tuberculous joint disease. Nicholas Senn has pointed out that slight traumata, such as bruises and sprains, are at times etiological factors, whereas, more severe injuries are not nearly so apt to be followed by bone tuberculosis. This fact confirms Bier's theory that stasis favors tuberculous invasion, while hyperemia is antagonistic to it. The exanthemata must be mentioned as a causative factor in a certain proportion of cases—measles and scarlet fever being the most common eruptive diseases to be followed by these sequelæ. "In short, it is probable that whatever continuously diminishes the power of resistance and repair in growing children increases the soil for development of the tubercle bacilli and the consequent results."

A unique peculiarity of the symptoms of this disease is the tendency to intermit. The child may complain severely for several days, then have the symptoms gradually disappearing for a time, only to return again with the same degree, or possibly a greater degree, of severity. Again the child may have a slight limp in the morning, which by noon has disappeared, and again returns the following morning. The length of the intermittency varies greatly. It may be only for a few days or may extend over several months and is even said to be possible to embrace an intermittence of years.

If any one symptom could be termed most

important, most diagnostic, and possibly the earliest, muscular rigidity or spasm most deserves this distinction. Muscular rigidity is usually the first symptom to appear. It is always present to some degree, restricting the joint's normal arc of motion. It is due to a reflex irritability of the muscles controlling the joint which causes them to maintain a condition of tonic spasm of greater or less degree. It disappears under full anesthesia, yet it is entirely independent of volition. Increasing stiffness, appearing in the course of treatment, is a sign that either the treatment is inefficient, that there is an increase of the disease, or that rigidity from pathologic destruction of the joint has occurred. The importance of the recognition and accurate study of this symptom cannot be overestimated. It is not not only the most important sign of the disease, the chief reliance in the matter of diagnosis, but it is the cause of malformation and deformities. It is responsible for the early limp and the shortening of the limb in hip disease, of the wearing away of the acetabulum and of the head of the femur, of the peculiar gait, the distortions and the attitudes assumed in Pott's disease, and it is also a causative factor in the production of much of the pain. It furnishes the most accurate index of the progress of the case, improving or becoming worse, according to the phase of the disease. The peculiarly diagnostic postures of the individual joints affected with joint tuberculosis are produced not by the disease but by the muscular rigidity that it causes.

Closely associated with muscular rigidity is pain. Unlike muscular rigidity, pain is a symptom which is not constant and is a symptom not to be relied upon.

Many cases of hip disease are treated for weeks with salicylates and liniments for rheumatism of the knee, yet all the classical symptoms of hip disease are present. With the child undressed, a diagnosis should be made by inspection. A child presenting suspicious symptoms should always be stripped of all clothing before being examined. In tuberculous disease of the spine, when pain is present, it is usually referred to the anterior chest, abdomen, or limbs. Abdominal pain passes for "stomach-ache," thoraric pain for pleurisy, and pains in the limbs for "growing pains" and rheumatism. In tuberculosis of the shoulder joint the pain, when present is referred to the middle of the arm. In sacroiliac disease, the pain follows the sciatic nerve and is often mistaken for sciatica. In knee, ankle, or elbow disease, the pain is often absent entirely, and, when present, is usually referred to the distal portions of the limb. It may be said here that persistent localized pain in the case of a child is a symptom demanding very great attention.

Analogous to these attacks of pain, are disturbances of the functions of other nerves, manifested in cough, peculiar grunting respiration, dyspnoea with cyanosis, gastric disorders, obstinate and recurring vomiting, rectal and vesical disturbances.

Night cries, an early and important symptom of this disease, and often the very first symptom to be noticed by the mother, is merely a manifestation of the muscle soreness, that results from the constant tonic spasm to which the muscles have been subjected during the entire day. When the child goes to sleep the contracted muscles, which have been on guard all day, relax. Any sudden movement of the child excites reflex contractions of these muscles controlling the joint, and the sudden contraction gives rise to pain. Muscle soreness is apparent only when the affected muscle is in the state of irritation or motion. The child is rarely awakened by the pain, but usually moans or cries and remains sleeping. If awakened, it makes no complaint of pain and the cry is supposed to be caused by a "bad dream." Night cries are most common during the early hours of sleep when muscular relaxation is most complete. They may occur many times during the night, but do not occur if the child is awake. Atrophy of the muscles in the neighborhood of the joint is another early symptom of importance. It begins sharply and very early.

Radiography is of very great value and should be used in all doubtful cases. The slightest bone erosion can be determined and interpreted by a skillful radiologist and even before erosion occurs the radiogram will indicate, by the diminished resistance to the passage of the X-ray, the greater vascularity of the epiphyses, which always is present at this early stage.

Dr. Randle C. Rosenberger has been able to demonstrate in the peripheral circulation the presence of the bacillus of tuberculosis in every case of phthisis, also in those cases in

which the joints were the parts affected. Moreover, Dr. Rosenberger claims that the tubercle bacilli are present in the blood stream in the earliest cases, even before physical signs have become manifest. This being the case, Dr. Rosenberger's revelations should be of enormous value to the orthopedic surgery, and undoubtedly will in the future, be instrumental in establishing diagnoses that heretofore would not have been possible.

DISCUSSION OF THE PAPERS OF DRS. MUSCHLITZ AND DAVIDSON.

Dr. H. Hudson: I would like to see the Cugillere serum used on an equal number of incipient cases. This would give the serum the most favorable chance and in this way we could weigh its exact value. In reference to what Dr. Davidson has said it has been my experience that tuberculous conditions are recognized too late. We used to think not very long ago that joint tuberculosis is a local disease, but we think now that researches show that it is a general disease with a local manifestation. Consequently we have a double reason for recognizing the disease early. The epiphysis is the weak point in the bone and it is on this account that trauma plays such an important part in the causation of the disease. While the disease is confined to the epiphysis its manifestations are very slight, but one symptom is pre-eminent—that is, muscular rigidity. In advanced cases with such caseation of the bone ends examination should be conducted very carefully, as there is danger that by the rough handling crushing the bones may occur; this is also true as regards treatment. Diagnosis should be made early so that treatment can be instituted before the disease has broken through into the joint cavity and thus become disseminated throughout the joint. When diagnosis is made early the advanced joint conditions will become as rare as are large abdominal tumors. When there is doubt as to diagnosis the joint should be protected by proper extension. When there has been injury to the joint, followed by persistent localized pain, tenderness or swelling, without other inflammatory symptoms at once suspect tuberculosis and protect the joint.

Dr. T. T. Thomas: Although the paper of Dr. Davidson was on bone tuberculosis, Dr. Hudson confined his remarks to joint tuberculosis, giving rise to the inference that bone tuberculosis always extends into the joint. This is not the case. as it often extends the other way. A great many cases can be recognized, opened, and cleaned before they extend into the joint. Of course, this is not true of bone disease in the head of the femur. I wonder too, if it was intended that we should understand that all cases of joint tuberculosis begin in the bone. I am not ready to accept that as proven or generally believed. Although the majority of cases begin in the bone, there is very good authority for believing that the disease at times begins in the synovial membrane or other soft structures. I think that joint tuberculosis is overlooked too frequently until it is too far advanced.

Dr. W. J. Merrill: Dr. Muschlitz's paper is based on careful experiments, which I had the pleasure to observe. The cases were treated in the environment to which they had been accustomed without change of air or climate, so I think it was a very fair test. The cases reported by Lovett did not correspond to those of Dr. Muschlitz, whose cases seem to show the inefficiency of the serum in advanced cases. We can draw the conclusion from Dr. Muschlitz's cases that the serum has no specific action upon tuberculous bone in the knee. Although we know the ingredients of this serum, its preparation is kept as secret as possible. I think this alone shoull condemn this serum to the list of proprietary preparations.

Dr. W. F. Manges: The radiographic study of bones is very interesting and promises to be of great value. The picture of bone tuberculosis is rather characteristic; the most striking feature is early disappearance of the mineral salts of the bone. The disease sometimes begins on one side of the epiphyseal line and at other times on the other side. When it begins on the diaphyseal side, an early feature is atrophy, which. however. differs from that induced by putting the bone on a splint and having it at rest for an indefinite time. Where the subject is a favorable one for X-ray examination. I believe one can detect very early the bone changes in tuberculosis. In the dorso-lumbar region it is difficult to determine much by the X-ray, but if the bone can be brought close to the sensitive plate and kept still one can do a great deal to differentiate between tuberculosis, sarcoma, rickets, and scurvy.

Dr. J. P. Schell: Dr. Davidson sums up the question of early diagnosis very accurately.

I would like to add my testimony that in all cases of tuberculosis which I have seen, when there has been an injury it has been very slight. I have a man now under my care who has tuberculosis of the ankle due to slipping from a 12-inch step. In children the mistake usually made is that of taking tuberculosis for rheumatism. We should look upon all children with sore joints and rigid muscles as tubercular until proven to be rheumatic. I would ask Dr. Manges if he can diagnose syphilis of the bone early with the akiagraph. I have a patient in whom a diagnosis of tuberculous periostitis was made by two of Philadelphia's leading X-ray men, but it has proven to be syphilitic.

Dr. Manges: The statement I made is perhaps not to be taken literally. The general appearances of tuberculosis are different from those of syphilis. In syphilis the bone becomes very hard, and in syphilitic periostitis the process is very apt to lead into the substance of the bone and the whole to assume a spindle shape; in tuberculosis there is atrophy.

Dr. Pepper: Some time ago I saw a girl 15 years old, who had rigidity and pain at the hip but not at the knee and the condition was due to retention of the urine. She voided one or -two ounces of urine at a time; on catheterizing her a number of times the condition disappeared.

Dr. Muschlitz: Dr. Hudson spoke of giving Cuguillere's serum a fairer trial by treating early cases. It has been claimed Cuguillere's serum is almost a specific. As a matter of fact the reports must have been erroneous from the experience which has been had by two other investigators—Dr. Bayer, of Baltimore, and Dr. Johnson, of Toronto. Both of these men have had practically the same results I have had. Whether or not treatment by this serum in incipient cases will be successful we cannot say. It will not cure in advanced cases. All the cases reported cured have had the advantage of outdoor life and many were sent to the seashore. Dr. Merrill spoke of its being a proprietary remedy, and I heartily agree with him. It is not felt that it deserves the support of the American profession. Thus far I have failed to find out the method of preparation. We only know that it contains the three ingredients I have mentioned. I believe that many cases of bone tuberculosis are not recognized because a thorough examination is not made. I believe that in children, as well as adults, the patient should be stripped from head to foot, because we know that in many cases of bone tuberculosis there is confusion as to the exact location, for example, the disease of the hip is often referred to the knee. There are two other diseases—namely, rickets and scurvy—that must be considered. In scurvy a fair number of cases have joint symptoms, and a careful eramination will reveal other signs of scurvy. In rickets the joints often become tender, and in this way the condition is rendered very confusing.

Dr. Davidson: Dr. Muschlitz has voiced my opinion exactly when he insists upon stripping of the patient in making our examination. I think this is the most important thing. It should be the routine in every case.

The Use of Tuberculin in Ophthalmic Practice.

Dr. L. C. Peter: Many of the unpleasant symptoms and complications arising from the use of tuberculin in ophthalmic practice the writer believes are due to faulty technique and lack of discrimination in the selection of cases and of methods.

The Calmette reaction should not be used in determining eye conditions because of its dangers, and should be used in determining the tubercular character of lesions in other parts of the body in selected cases only. Under these circumstances the test should be employed only by one who is thoroughly versed in eye conditions, old tuberculin should be used in one-half to one per cent. strength, and there should never be more than two successive instillations made in the same eye.

Its advantages are accessibility of the part treated, ready reaction of patient, absence of constitutional symptoms and the positive character of the reaction when present.

In eye conditions the Von Pirquet or, preferably, the subcutaneous, test should be used, the initial dose in the latter case being about 0.005 mg. This is a much smaller dose than is usually given, but, if no reaction follows, the dose may be increased and a constitutional reaction may be obtained without the harmful effects of a decided local reaction. Local reactions should be avoided if possible.

In the treatment of tubercular eye conditions by tuberculin, whether in the hospital, at the patient's house or in one's office, if the patient can give intelligent co-operation, a graphic chart of pulse, respiration, temperature, dose and time of administering the dose should be kept. The initial dose should be 0.0001 mg. This dose may be increased by definite amounts from day to day providing there is no reaction or all trace of reaction has disappeared. After large doses are tolerated, several days should intervene between doses. By following a definite and accurate method no unpleasant symptoms will arise, the patient takes on flesh, appetite improves, temperature and cough, if any, abate. A general improvement may be observed in the second and third week of treatment, and, following general improvement, a change for the better may be noted in local conditions.

The cure of local eye conditions is no indication for stopping the treatment, but increasingly large doses should be given at intervals of several days until the central, or primary, trouble gives evidence of being under control. The usual modern methods of rest, fresh air, and hyper-nutrition should be rigidly enforced and local measures should be continued.

In the choice of tuberculin, preference should be given to those preparations which contain the tubercle bacilli, as emulsions and the watery extract. Von Ruck by recent statistics, has shown conclusively that the latter preparations are much superior in therapeutic value to those which contain only the filtrate or supernatant fluids.

Dr. G. Morton Illman: Conservatism is certainly the word in using vaccine and serum. I certainly am pleased to hear the sentiment expressed by Dr. Peter. I have always refrained from using a Calmette test on any individual. I am afraid of it; more especially when we have used hypodermic injections and have gotten just as good results as we could get in using the Calmette test. I have always been afraid of opacities and chronic conjunctivitis, both from the tuberculin and from faulty technique, which is often unavoidable. When properly used in selected cases it is excellent.

Dr. J. W. Pancoast: In my experience tubercular diseases of the eye are rare. In eight years at the Wills Eye and eleven years at the Pennsylvania Hospital, with a total of 50,000 cases, I can recall but two cases as tubercular. One case was diagnosed by Dr. McClurt, who brought the case and presented it as a great curiosity. All the four surgeons agreed, but Dr. Norris objected to the diagnosis, although he did not make a diagnosis. I have now under my observation a case that is probably tuberculous iritis, and I think I shall try tuberculin on this case.

Dr. Peter: A great many eye troubles, such conditions as phlyctenular conjunctivitis, are found in tubercular individuals, as is shown by careful examination of the lungs. At least 60 per cent. of cases of phlyctenular conjunctivitis are tubercular. For a great many years interstitial conjunctivitis has been thought to be syphilitic, but now a great many of these cases are recognized as tubercular.

Analyses, Selections, Etc.

Stricture of the Male Urethra.

In a paper by Dr. E. O. Smith, Professor of Genito-Urinary Surgery, Ohio-Miami Medical College of Cincinnati, read before the Mississippi Valley Medical Association, St. Louis, October 14, 1609, the author called attention to the fact that stricture of the urethra is an abnormal narrowing of some part of that channel which interferes with the free outflow of urine, due to either muscular spasm or to organic changes in the walls of the urethra.

Abnormal narrowing of the external meatus should be divided very carefully. If cut too widely, the patient will be left without projectile force.

Spasmodic contraction of the urethra is usually due to acid urine, sexual excesses, fissure of anus, hemorrhoids, pin worms, cantharides, turpentine, etc.

Stricture following traumatisms are much more stubborn to yield to treatment and the band of scar tissue may have to be dissected out through an external incision.

The popular idea that a rapid cure of gonorrhea causes stricture is not based on facts, but, on the contrary, the longer the duration of the gonorrheal inflammation, the more liable is the patient to have a stricture. In fact, it is the exception for an urethra to become abso-

lutely normal after one prolonged attack of specific urethritis. The urethra behind the constricting band becomes dilated, a pouch is formed which is a most excellent container and incubator for the germs of sepsis, which may lead to periurethral abscess and possibly urethral fistula. All this argues for an early treatment of stricture.

Stricture is suspected when there is gleet, frequent micturition with a tardy beginning of the stream, dribbling after urination, with possibly some hypogastric pain.

In examining for stricture great care and gentleness must be practiced; otherwise a false passage may be produced.

Treatment is both general and local. The diet should be bland and not stimulating. Alcohol and tobacco are to be excluded. Sexual excesses are likewise to be avoided. There must be no exposures to cold and wet.

Local treatment is that of gradual dilatation. Begin with the largest sound or bougie that can be easily passed. This may be only a filiform. Gradually increase the size of the sounds used. Treatments are to be carried out every four or five days in the beginning, all the time being surgically clean with one's hands and instruments.

Urethral chill and shock can usually be prevented by giving the patient ten grains of quinine and five drops of tincture of aconite about twenty minutes before the treatment.

Epididymitis may, but seldom does, follow the passage of a sound.

Strictures that do not yield to the gradual dilation treatment are the exception. Internal urethrotomy should not be attempted except by those skilled in genito-urinary surgery, as there is a possibility of doing great damage.

External urethrotomy is seldom necessary in the treatment of stricture, other than those due to traumatism.

Genital Canal Block Following Neisser Coccus Infection.

With a number of photographs illustrating the pathology found in genital canal block, Dr. Charles E. Barnett, of Fort Wayne, Ind., in a paper read before the Mississippi Valley Medical Association, St. Louis, Mo., October 14, 1909, contends that sterility is not the greatest factor, but that the pathology causing the block and following it, especially the retention cysts, are "nagging" the man's body continuously. One of the illustrations shows atresia of the sinus pocularis as the block. He believes that prostatectomy, unwittingly, frequently opens up the vesicular field for drainage. He considers that in the correction of this pathology the surgical question is a difficult one when the final results anticipate normal function. It is true that in some cases the cysts are emptied and the block removed. This relieves the symptoms temporarily, but the time may finally come when a recurrence will happen, indicating that a thorough removal of the field that is pathologic is necessary in order to prevent a further extension of the diseased process, rather than to try to save a crippled canal surrounded by contaminated glands that will never assume complete resolution.

Correspondence.

Medical History.

Mr. Editor: The faculty or alumni, or both, of each medical college in the United States should go to the expense of publishing a history of their college from the time it was established down to the present. Much valuable information regarding the history of medical colleges could be obtained at present which could not be had in a few years from now. The profession is in need of a complete history of all medical colleges in the United States. including all schools, now existing and extinct of all systems of medicine. Such a work could be prepared by selecting old physicians in various parts of the country to write it and by searching what history that is already on record concerning them. There are many physicians now connected with schools and have been for many years that could tell many things in the history of the school that is not on record and no other person knows that will soon be lost by their death; and now is the time to get their information.

I believe each medical college in the United States should publish a history of the graduating class each year in either the college announcement, or what would be better, in some medical journal. The journal of the State Medical Society in which the college is located would be very appropriate for the class history. The history of each member of the

class should contain his full name, date of birth, place of birth, married or single; public schools, colleges, etc., that they have attended; preceptor, if any, and other information concerning them. The history should contain the photo of each member.

It would also be a goood idea to have each graduate's photo on his diploma. The association of colleges could adopt these rules, or State Boards could require it of all schools in order to be in good standing, and it would be to the interest to the profession in more than one way. I hope to see this question discussed and these views carried into effect.

J. A. BURNETT, M. D.

Chismville, Ark.

Book Notices.

History of Yellow Fever. By GEORGE AUGUSTINE, M. D., Assistant Secretary Louisiana State Medical Society, etc. New Orleans. Published for author by Searcy & Pfaff, Ltd. 1909. 8vo. 1,194 pages. Cloth. $6.00.

This book has been under preparation for some years—rather as a labor of love by the author than in anticipation of material financial profit. It is divided into five parts. Part I contains general observations. Part II. has some preliminary observations on yellow fever. Part III gives the history of the disease according to locations in different countries of the world—special attention being given to its history in North America. Part IV is taken up with the history of the yellow fever epidemic of 1905; and Part V. details the accepted modern theories concerning yellow fever—including its pathology, diagnosis, prognosis, sanitary prevention, treatment, etc. The doctrines maintained are that there are only two ways in which yellow fever can be transmitted:—(1) By the bite of the female mosquito of the genus *Stegomyia Fasciata*, which has previously fed upon the blood of a person suffering from yellow fever during the first three days of the attack; or (2) By inoculation with the blood of a yellow fever sufferer during the first three days of the attack; after the third day, the disease cannot possibly be communicated. Due credit is given Dr. Walter Reed and others for the work done, pointing out the causes, means of prevention of epidemics, etc. The author in the preparation of this immense volume has been assisted by the contributions of about a dozen writers. The reader has to depend on the fourteen pages of Contents to refer to a subject, as no Index is appended. To the student of yellow fever,this book will prove of special service in being accurate in its details, and logical in its deductions.

Medical Sociology. By JAMES PETER WARBASSE, M. D., Member American Association for Advancement of Science, etc. New York and London. D. Appleton & Co., 1909. 12mo. 355 pages. Cloth, $2.

It is a worry to a book reader to have to spend a half hour or so cutting the pages of a book so as to read them. Barring such a worry, this "series of observations touching upon the sociology of health, and the relations of medicine to society," affords instruction in a popular way, and also is suggestive of many things of benefit to the people and profession alike. Indeed, the book is intended in great part to break down the barriers between the physician and the public. "The plea that goes out to the public from the great heart of the medical profession to-day is that *prevention* shall take the place of cure." And it is along this line of thought that the work is written in a strong, impressive manner. We are glad to learn that the advance sale of this book shows a demand on the part of the general practitioner for information on the important subjects treated of.

American Pocket Medical Dictionary. Edited by W. A. NEWMAN DORLAND, A. M., M. D., Assistant Obstetrician to Hospital, University of Pennsylvania, etc. Sixth Edition. Revised and Enlarged. Philadelphia and London. W. B. Saunders Co. 1909. 32mo. 598 pages. Flexible Morocco, Gold Edges. $1 net; thumb indexed, $1.25 net

The demand for this "Pocket Medical Dictionary is shown by the number of editions since 1898, each an improvement on the former. No attempt is made to substitute this for the larger dictionaries, but simply to present a thoroughly useful, reliable hand book which may be taken around in the doctor's "grip." The arrangement is as strictly alphabetical as possible.

Essentials of Medical Chemistry—Organic and Inorganic. Containing Questions of Medical Physics, Chemical Philosophy, Analytical Processes, Toxicology, etc. By LAWRENCE WOLFF, M. D., Formerly Demonstrator of Chemistry, Jefferson Medical College, etc. Seventh Edition. Revised by A. FERREE WITMER, PH.G., M. D. Philadelphia

and London. W. B. Saunders & Co. 1908. 12mo. 225 pages. Cloth, $1 net.

This is No. 4 of "Saunders' Question Compends," of which over 275,000 copies have been sold since the first edition. It contains systematically arranged questions and answers, as a material help for review purposes by students of medicine, either in their original studies or in preparing for examinations, etc. It is likewise useful to teachers, examiners on boards, etc., as suggestive as to what and how to ask questions, etc. The specially large demand for these "Compends" shows their popularity and utility.

Editorial.

The American Public Health Association

Held its thirty-seventh annual meeting in Richmond Va., October 19-22, 1909, the sessions proving interesting and valuable from every point of view. Public health officers were present from many sections of the United States, Canada, Mexico and Cuba, the attendance being probably as large as any in the history of the Association.

Since its one other meeting held in Richmond thirty-one years ago, when hygiene and preventive medicine were regarded as of not such great importance, this Association has developed from the infant in knowledge and power and usefulness, until now when the wonderful possibilities of preventive medicine have reached proportions which even a decade ago would have seemed scarcely credible.

For purposes of convenience and to expedite the work, the American Public Health Association was divided into three sections—those on laboratory, vital statistics, and municipal health officers—and these sections only came together when questions affecting the whole Association came up for consideration.

Yellow fever, malaria, typhoid fever, diphtheria, tuberculosis, small-pox plague, pellagra, hook-worm disease, rabies, glanders, prevention of high infant mortality, which latter was declared to be due mostly to ignorance and neglect, etc., all came in for discussion during the various sessions of the Association and one is left to marvel at the rapid strides forward that have been made by the profession during the past few years. Inspections of meat, bakeries, and foodstuffs in general, milk, bad water, dust nuisances, and contaminated air, soil pollution, industrial and school hygiene, the house-fly, mosquito, and other pests, sewerage, vital statistics, and a hundred and one other subjects received due attention.

The Association, during the course of its proceedings, adopted the following:

Resolved, That the practice in many American cities of making the appointment of their health officers a political question is contrary to the best interests of public health; and

That we unreservedly recommend that such appointments be made only on the basis of the professional qualifications of the applicant, and that when these are appointed they be contined in office, and be released or dismissed only for cause.

The following officers were elected for the ensuing year: President, Dr. C. O. Probst, Columbus, Ohio; First Vice-President, Dr. C. A. Hodgetts, Toronto; Second Vice-President, Dr. E. C. Levy, Richmond; Third Vice-President, Dr. Frederico Torralbas, Havana; Secretary, Dr. W. C. Woodward, Washington; Treasurer, Dr. Frank W. Wright, New Haven, Conn.

Milwaukee, Wis., was selected as the next meeting place, the time to be named later.

The local committee of arrangements, Dr. E. C. Levy, chairman, deserve especial commendation for the way in which they cared for the comfort of the visiting members and of the meeting we hear on all sides words of the meeting we hear on many sidse words of praise for this committee.

Army Medical Corps Examinations.

The War Department has appointed permanent boards for the preliminary examination of applicants in the medical corps of the army to meet at Washington, D. C.; Fort Sheridan (near Chicago), Ill., and San Francisco, Cal., in addition to the usual preliminary examination boards that are assembled at various army posts throughout the United States from time to time. The permanent boards will hold sessions on the second Monday of each month. A limited number of successful candidates will be appointed first lieutenants in the Medical Reserve Corps (salary, $2,000 per annum), and assigned to army posts until the next session of the Army Medi-

cal School, when they will be ordered to attend the school as "student candidates."

Applicants must be citizens of the United States, between 22 and 30 years of age, graduates of reputable medical schools, of good moral character and habits, and shall have had a year's hospital training after graduation, or its equivalent.

Full information can be procured upon application to the Surgeon General, United States army, Washington, D. C.

The Association of the Seaboard Air Line Railway Surgeons

Convened for its eighth annual session at Raleigh, N. C., October 19-20. A resolution was passed urging the officials of the company to establish a relief department, together with a pension fund for superannuated employees, and requiring a rigid examination of all persons coming into their employment.

Several papers of interest were read, the program being interspersed, however, with numerous entertainments. The newly-elected officers are: President, Dr. J. R. Rogers, Raleigh; Vice-President, Drs. J. G. Dean, Dawson, Ga.; W. M. Wilder, Charlotte; Joseph M. Burke, Petersburg; Secretary-Treasurer, Dr. J. W. Palmer, Alley, Ga.; member of Executive Committee, Dr. E. H. Terrell, Richmond.

National Association on Pellagra.

At the recent Conference on Pellagra, held at Columbia, S. C., November 3-4, 1909, a National Association for the study of this disease was formed, and the following doctors were elected officers for the year: Drs. J. W. Babcock, Columbia, S. C., President; W. A. White, of Washington, D C., Vice-President, and G. A. Zeller, of Ohio, Secretary and Treasurer. Dr. William F. Drewry, of Petersburg, was elected Vice-President for Virginia.

The Virginia delegates to this conference were Dr. Ennion G. Williams, Richmond, chairman, and Drs. William F. Drewry, Petersburg; Beverly R. Tucker and Thomas W. Murrell, of Richmond; Rea Parker, Williamsburg, and Harry T. Marshall, of University.

Virginia Anti-Tuberculosis Association.

The organization of this association in Richmond, Va., November 6, 1909, is another step gained in the popular fight against the white plague in this State. Under the temporary chairmanship of Dr. Wm. F. Drewry, well-known in Virginia for his great work along this and kindred lines, permanent officers were elected, including Capt. W. W. Baker, of Hallsboro, as President, and Miss Anne Gulley of Richmond as Secretary. The plan contemplated by this association in its anti-tuberculosis work, is to organize local leagues in every city and town of the State, which will co-operate with the central association in spreading the truth about the disease, and carrying the war against consumption into every community of the State. The Association will later announce its campaign more in detail.

The Augusta County Medical Society

Held its last regular meeting at Staunton, Va., November 3, 1909. After installation of officers, an interesting scientific program was enjoyed. Many plans for the better working of the society were discussed, as also plans looking to the establishment of a Tubercular Hospital in Staunton, where all conditions of tubercular patients may be cared for, including alike white and colored. To this end, a committee composed of Drs. Bradford and Spencer of Staunton, Griffith of Basic City, Whitmore of Mt. Sidney, and Welland of Middlebrook, was appointed to confer with city and county officials. The annual banquet, held in the evening at Hotel Augusta, added much to the social pleasures of this meeting.

International Congress on Hygiene and Demography.

On invitation of the Department of State of the United States Government, the fifteenth session of this congress will convene for the first time on the American continent in Washington, D. C., September 16 to October 1, 1910. Section III. of the congress will deal with subjects of Hygiene of Infancy and Childhood; School Hygiene. As this subject is considered one of the utmost importance, the secretary of this section, Dr. Luther H. Gulick 1 Madison avenue, New York city, would be glad to know of any pieces of original work which are being done, bearing on this topic.

The American Gynecological Society.

The president of this society has appointed the professors of Obstetrics in Columbia Uni-

versity, University of Pennsylvania, Harvard, Jefferson Medical College, Johns Hopkins, Cornell and University of Chicago, a committee to report at the next annual meeting in Washington, May 3-5, 1910, on the Present Status of Obstetrical Teaching in Europe and America, and to recommend improvements in the scope and character of teaching of obstetrics in America.

Dr. B. C. Hirst, 1821 Spruce street, Philadelphia, Pa., chairman of the committee, will be pleased to receive communications from parties interested in the subject.

Pediatrics,

A well-known monthly journal devoted to the study of disease in children, has recently been purchased by Dr. W. E. Fitch, heretofore editor of Gaillard's Southern Medicine, for many years of Georgia, but latterly of New York.

Dr. Fitch is well and favorably known as an editor and writer of medical literature, and we bespeak for him much success in his new undertaking, in which he will have the collaboration of many of the country's foremost pediatrists.

The Medical and Surgical Society of District of Columbia.

Held its annual meeting November 4, 1909, in Washington, D. C. After an interesting scientific program, the following officers were elected: President, Dr. W. C. Gwynn; Vice-President, Dr. Truman Abbe; Secretary and Treasurer, Dr. Llewellin Elliot, and Assistant Secretary, Dr. F. E. Harrington. Members of the Executive Council are Drs. J. D. Morgan, F. R. Hagner, L. Elliot, D. P. Hickling, and W. P. Carr.

Annual Dues of Medical Society of Virginia.

In an editorial in the last issue of this journal referring to the Roanoke session of the Medical Society of Virginia, an awkward printer's error was made by the omission of the second line in the paragraph relating to amount of annual dues. Such paragraph should have read:

An impression has gained currency that the annual dues were increased. Such dues still remain two dollars *per capita,* though a resolution to raise dues to three dollars will have to be voted on next session.

The South Piedmont Medical Society

Will hold its ninth stated meeting in Lynchburg, Va., November 16, 1909. An attractive program is being arranged, including a symposium on Malaria, which will be discussed under the following sub-divisions: Etiology and Pathology, by Dr. J. W. Carroll, of Lynchburg; Symptoms, by Dr. H. S. Belt, of South Boston, and Treatment, by Dr. R. B. James, of Danville. Drs. H. T. Marshall, of University, and Lomax Gwathmey, of Norfolk, have also accepted invitations to read papers.

Edwards & McLaren Eye, Ear, Nose and Throat Sanatorium.

Drs. Robert Lee Edwards, formerly of Darlington, S. C., and Arthur Francis McLaren, recently of Cornwall, Ontario, announce the opening of their sanatorium for the practice of the above specialties at 100 East Grace street, Richmond, Va.

The Patrick-Henry Medical Society

Will meet at Martinsville, Va., November 15, 1909. An interesting program has been arranged, including papers by Drs. B. F. Tatum, of Stuart, Va.; J. M. Shackelford, Martinsville, Va.; W. W. Moore, Smith, N. C., and C. H. Ross, Bassett, Va.

Dr. Joseph A. White

Has been appointed chairman of the local committee on entertainment of the Tri-State Medical Association of Virginia and the Carolinas, which meets in Richmond, Va., February 8, 1910.

The Southside Virginia Medical Association

Will hold its next quarterly meeting at Emporia, Va., December 14, 1909. As usual, an attractive program will be enjoyed by those fortunate enough to be able to attend.

For Sale—$3,000 cash practice, in a railroad village. Nice house, all necessary outbuildings, and conveniences, good roads, fine country with churches, schools, etc. No opposition. Address "W.," care *Virginia Medical Semi-Monthly.*

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Original Communications.

REPORT OF CASE OF BURN WHICH INVOLVED ONE-HALF THE BODY AREA, WITH RECOVERY—EXHIBITION OF PATIENT.*

By A. H. BARKLEY, M. D., Lexington, Ky.

The purpose of presenting this subject is to mention a few of its most interesting phases. No reference will be made to lesions produced by swallowing caustics of any character, the object being to present those due to any form of heat applied to the external surface of the body.

Burns are, without exception, the most frequent injury in civil life, and the liability of late years seems to have increased in direct proportion to the invention of machinery and progress of civilization and science.

There is no injury that causes more agonizing pain and protracted suffering, and so often condemns the unhappy patient to a life-long mutilation of the most distressing and repulsive character. Burns are herein defined as injuries produced by the application of heat in any form to the body.

The severity of a burn depends on the character and degree of heat, the length of time it is applied and thickness of the cutaneous structure. Thus, molten lead will produce more destruction in the same length of time over the same area than hot water or steam, and it will require a longer application of dry than moist heat.

History and Etiology.—Concerning the history, little can be said except burns have been treated almost since the creation of man, but it remained for Hippocrates to describe in his own way the nature of burns, and to lay down certain lines of treatment which evidently answered very well at that time. His teachings along this line were not questioned until several centuries later, when an attempt was made to divide these injuries according to the substance which produced them. This was later changed with a view to describe the intensity of the injury, and this latter classification or description has undergone many changes.

The causes of burns and their general consideration would be voluminous, and while they are given in order of their supposed frequency, only those causes will be mentioned that seem of most importance in the discussion of this subject.

The following causes may be mentioned: Hot water, steam, heated or molten metals, flames, gas explosions, the sun's rays, caustics, hot water bottle, lightning, hot air, acids and various chemicals, and water containing various salts.

Among the causes mentioned hot water, steam, and metals, are the most frequent. It might be mentioned here that the hot water bottle, so frequently and, I am sorry to say, carelessly used by nurses, plays no small part in the retardation of recovery of a patient who has been so very unfortunate as to be burned by it. This is one cause of burns we must remember, but it should never occur, and the exexrcise of a little care and judgment on the part of the nurse will rob the hot water bottle of its horrors. Burns are more or less influenced by the character of fabric covering the skin, as when the surface is covered with silk or cotton the damage is considerably less than when covered by wool. Again, burns are most severe with tight-fitting garments than with loose, because the heat is more directly applied in one than in the other.

Location of Burns. As will be readily seen, there is no part of the body that enjoys immunity from this injury; however, some parts are more prone to suffer than others. In

*Read before the Mississippi Valley Medical Association, at St. Louis, Mo., October 12, 1909.

general, the exposed surfaces, as hands, arms, face and neck, are more often affected than the limbs and trunk. The severity of a burn is sometimes increased by its location, as, for instance, a burn of the same area and depth would be more dangerous about the head than on the thigh from the fact that the complications of the brain, meninges, and erysipelas, would be more likely to follow than any complication arising from an injury to the thigh. The same holds good with respect to the chest and abdomen, as they, too, are likely to be followed by intra-abdominal and intra-thoracic complications.

Thus it will be seen that aside from the cosmetic effect the complications that sometimes arise from burns may be due somewhat to the locality involved.

Degree of Burns. Burns may be divided into three degrees, as follows:

First degree.—Erythema, hyperæmia, or superficial skin irritation.

Second degree—Vesicle formation, cutaneous inflammation.

Third degree—Eschars, devitalization of the skin or deeper parts, or carbonization of a member or the entire body.

Some make as many as six different classifications, while others classify them as burns and scalds, making a distinction in the manner in which heat is applied. Practically, with regard to their effect after long exposure, there is no difference between burns and scalds. Scalds are more extensive in area and less deep than burns, and as a rule do not destroy the hair follicles.

In burns of the first degree, we have a superficial fading without definite edge into the natural skin.

In burns of the second degree, the process has been carried a little further; the sudden afflux of blood to the cutis has been relieved by the transudation of serum, thus forming a bleb. The skin is here in more danger, as the epidermis is likely to become detached, thus exposing the deeper structure to infection.

In the third, or last, class we have death of the tissues. The more intense or prolonged the heat which involves the subepithelial tissues, the more destruction the blood vessels, as well as the connective tissue, undergo, by the withdrawal of fluid and coagulation of albumen which causes coagulation of the blood.

The result is local death of tissue with the formation of an eschar. This may be superficial death or may involve the deeper structures as the bone or may even produce total carbonization and destruction of the limb or body.

Prognosis of Burns. The prognosis of burns may be considered from two view points; first, as to life; second, as to the usefulness of a member and the cosmetic effect.

With reference to the latter, the terrible deformity resulting from injuries of this character sometimes renders the individual unfit to earn a livelihood, and in the treatment all possible care should be taken to avoid such complications.

Burns about the extremities are the ones, as a rule, that incapacitate patients, while those about the neck and face are often followed by extensive cicatrization which produces the most horrible disfigurement. All burns through the corium result in cicatrization.

Several things must be considered in the prognosis as to life in cases of extensive burns: First, the age of the patient; second, condition of the patient's health at the time of the injury; third, area and depth of the burned surface; fourth, location of burn; and fifth, resulting complications.

Age of Patient. It is a well-known fact that young children do not stand burns well, as they are peculiarly liable to the numerous secondary visceral complications which are frequent sequels of burns, and are especially ill calculated to resist them. Thoracic and cerebral complications in children are out of all proportion, even in slight injuries, to that of grown people. The opposite extreme of life is likewise affected and stand these injuries poorly; hence, the prognosis is grave in both.

Health of Patient. The condition of the patient's health at the time of the burn is of importance, as one suffering from gout, tuberculosis, syphilis, nephritis, or any constitutional trouble which tends to lower vitality, will materially affect the outcome of a case. Alcoholics are very prone to succumb after burns, as they offer less resistance and are more liable to visceral complications than non-alcoholics.

Area and Depth of Burned Surface. Area and depth of burns are of the greatest moment in giving an opinion as to the probable out-

come of a case. It has been said that if one-third of the body area was burned, the chances of recovery would be small. It sometimes happens that small areas are followed by death due to shock and other complications, and where large areas of the body surface have a burn of the first degree, the shock and pain, together with the kidney complications which are very apt to occur in lesions of this character, should render the prognosis doubtful.

Burns of the chest are, of all others, the most fatal. Particularly is this true in children. Those of the abdomen are often followed by peritonitis, ulcer in the duodenum and other intra-abdominal troubles; those of the neck by laryngeal inflammation and edema of the glottis, and those of the face and head by erysipelas and cerebral inflammation. When located on the limbs and back where the skin and muscles are thick, they serve to protect the subjacent viscera, and are less fatal.

Resulting Complications. In regard to the resulting complications, it may be said that such as cerebral, visceral, sepsis, and kidney lesions are probably the most important, and in every instance where these conditions arise during the treatment of severe burns one must be very guarded in his prognosis of the case in question.

Anatomy and Physiology of the Skin. In order to appreciate the degree of a burn, it is necessary to understand the anatomy of the skin. The skin has three layers, as follows: First, epidermis; second, corium; third, subcutaneous connective tissue, blood vessels, nerves, lymphatics, sweat and sebacous glands, hair and nails.

In many regions of the body the skin differs somewhat in thickness, sensibility, presence or absence of hair, sweat or sebacous glands, etc. The thickness is most pronounced upon the soles of the feet, buttocks and hands; however, the thickness can in some cases be directly traced to the vocation, as, for instance, the skin on the hand of a laborer is thicker than that of the clerk or teacher. Thus, the normal thickness over the palms, fingers and face in the average individual is as follows: Palm of hands, 1-56 of an inch; fingers, 1-1800 to 1-900 of an inch; face, 1-1400 to 1-900 of an inch.

It might be mentioned that the thickness and condition of the skin is sometimes influenced by certain diseases, which may, and usually do, affect the vitality of the skin and should be carefully considered in each case of extensive burn. They are as follows: Gout, syphilis, tuberculosis, and nephritis.

The glands vary somewhat according to the locality, as follows: Sweat glands are more abundant in the palm sof the hand, axillæ and soles of the feet, as may be seen from the following figures: Palms of hand, 2685 to the square inch; soles of feet, 2736 to the square inch.

The sebacous glands are unequally distributed, being most abundant on the face and scalp.

Physiology of the Skin. A word about the physiology of the skin. It may be roughly said that the skin performs from 1-50 to 1-40 of the entire respiratory function. The absorptive power of the unbroken skin is still a debatable question, though the weight of opinion is that the skin has some power to absorb, though in small quantity. Thus it will be noted from the foregoing that an area of skin large enough to cover the body of an average person plays an important part in the excretory function. For instance, a person 5 feet, 8 1-2 inches, weighing 150 pounds, should have approximately 2325 square inches of skin, or 16 plus square feet of evaporating surface. It can be readily seen how burns involving considerable aera and depth would affect the health of an individual.

Treatment of Burns. It will be readily appreciated that these injuries require the most sedulous attention on the part of the attending physician to procure healing of vast areas and to prevent, if possible, any deformity, to support the patient's strength, and meet with intelligent treatment any threatened complication that may arise.

The treatment may be divided into *local* and *general* or constitutional. From the fact that so much has been written on the local treatment of burns and views expressed vary so widely, it would appear that no one plan of treatment will affect a cure in every case.

In burns of the first degree, the exclusion of air by some simple application will in the majority of cases suffice.

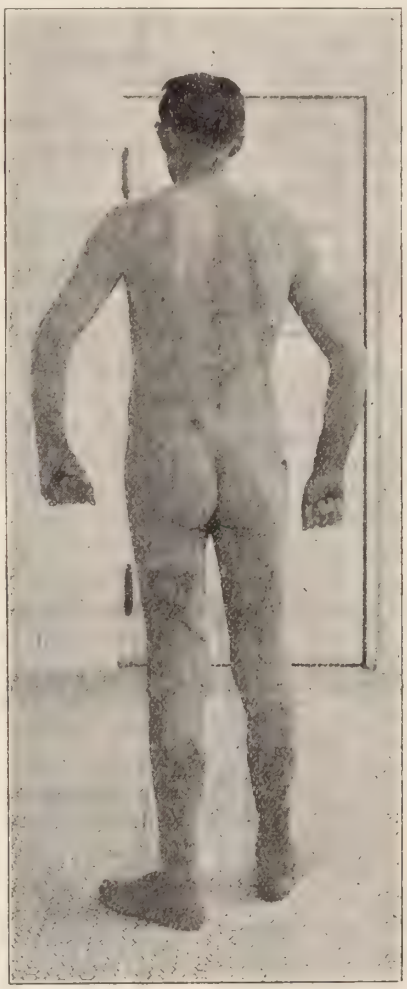
When the burn is of the second or third

degree or greater, the indications are much the same as in treating other wounds.

When blebs form, they should be opened carefully without detaching the skin, as this forms an excellent protection to the denuded area beneath. Some antiseptic should be kept in contact with the raw surfaces to keep them clean, which is conducive to rapid healing, such as: 1, boric acid ointment; 2, acetate of aluminum; 3, sterile dusting powders; 4, rubber tissue moistened in 4 per cent. ichthyol solution; 5, zinc ointment; 6, unguentine; 7, carbolic acid; 8, balsam Peru; 9, caron oil; 10, saline baths; 11, Epsom salts; 12, picric acid.

Picric acid, used by the French surgeons in strength of 1-50 or 1-100 by moistening a piece of gauze and placing it over the site of the burn, has given most excellent results, but in the hands of the writer it has given no better results than other less objectionable remedies. It is objectionable because it imparts a yellow stain to the skin and has been known to produce carboluria.

A solution of Epsom salts applied on gauze and kept moist is most useful, as it relieves pain, reduces inflammation, is non-toxic, clean and easy to obtain. The continuous baths of either normal saline or bicarbonate soda have given excellent results, and the writer can recommend the two latter remedies as both simple and efficacious. The local treatment will, therefore, depend on the degree and extent involved. It is not best, in most cases, to apply a too stimulating treatment, as the tissues are already too active; this, if possible, should be held in reserve until the granulating surfaces become sluggish. Some cases will



require little attention, while others will tax to the utmost the skill and ingenuity of the doctor. Constant care and the most rigid asepsis will be necessary, and even skin grafting, and in total carbonization of a member, amputation will offer the only chance to save life.

The constitutional treatment is equally important, but may be dismissed by saying that patients suffering from shock should be treated along the same lines as shock from other causes.

History. E. O., male, age 56, white, engineer, entered hospital on November 25, 1908, his train having been accidentally derailed a few hours previously. He was pinned beneath the engine for ten or fifteen minutes with steam and hot water playing over his body. When admitted, he presented burns practically covering both lower extremities, buttocks, penis and scrotum. On the left side there was an area which extended from the axilla above to the crest of ilium below and from the mammary line in front to the scapular region behind. The burned surface involved almost the entire lower limbs except a small area on calf of right leg, the left foot and the external surface of right thigh. The burn reached almost to the crest of ilium on right side. The left arm, including axilla, forearm and hand, the ear, side of face and neck likewise presented severe burns. There were also small superficial burns on right arm, forearm and back.

On the way from Ashland, Ky., to Lexington, the patient had a severe chill and was given half grain morphia. He was conscious and suffering no pain when admitted. His burns had been dressed with boric acid ointment. This dressing was continued for some days, as it seemed to act very well. In the afternoon of the same day of admission, the patient became delirious and his temperature went to 101 4-10 degrees, and pulse 112. This condition persisted for a period of three weeks with more or less delirium and a temperature ranging from 100 to 103 degrees, and pulse 96 to 130.

After about a month's treatment with the boric acid ointment, it was noticed that granulations began to spring up, but in places their color was not good, and their vitality questionable. Then it was decided that a continuous moist dressing would be better, so a continuous wet application, first of boric acid solution and then later of normal saline, was used. This latter seemed to help the granulating surface considerably. After the granulating surface and denuded areas got in a healthier condition it was thought advisable to not dress the places so often, so unguentine was used for a considerable period of time with apparently good results. However, after a time

the granulations seemed to become sluggish and a more stimulating treatment was indicated. Red wash (lotia rubra) was used as a constant wet dressing for a considerable period of time. The surfaces showed marked improvement under the application of red wash, and it was not long before the majority of the large areas were healed, or nearly so, and the only places remaining unhealed were those scattered over the trunk, neck and left limb, which were treated by strapping, and which finally healed. This gives the successive steps in the external treatment from day of admission to day of discharge.

The general treatment consisted in relieving pain, stimulation and nourishment.

On March 25, 1909, the patient developed a peri-urethral abscess which was opened,

drained and dressed, and finally healed without further trouble. His blood examination at this time showed as follows:

Hemoglobin	85 %
Leucocytes	23,266
Polymorphonuclear cells	77½ %
(a) Neutrophiles	76½ %
(b) Eosinophiles	1 %
Mononuclear cells	22½ %
(a) Small	10 %
(b) Large	12½ %

Repeated examinations of the urine during his illness failed to show anything abnormal except while he was suffering from the abscess above mentioned; it then contained an increase of indican, trace of albumen, few hyaline casts and many pus cells. After the abscess healed, his urine became normal and has remained so up to the present time.

The interesting features about the case reported are as follows: Area of skin burned; no contractures; healed without skin grafting; no complications.

The area of surface involved in this case has been accurately estimated. The patient is 5 feet, 10 inches, and weighed 160 pounds at the time he was burned. After a very careful calculation, it was found that he had an area of 19 plus square feet of skin over entire body, and that the area burned was ten square feet—a little more than half of the entire body surface. Of the ten square feet burned, nearly four square feet was of the third degree.

That there were no contractures following this injury is remarkable when we consider the locality and depth of the burn. The axilla and left arm had a burn through the thickness of the skin, and in places exposing the tendons, especially about the elbow. The pectoral muscle was also exposed. The burns over the lower limbs and a large part of the buttocks and left side were of the same depth, exposing the muscles and in many places deeper.

No skin grafting was necessary, as the places healed without the slightest difficulty, except for the length of time required, which was not unduly long when we consider the extent involved.

It may be said that no complications arose in this case. The condition of the kidneys were normal up to the time of the formation of the abscess, and again became normal after its subsidence. This condition of the kidneys I do not think can be charged to the burn but to septic condition due to abscess.

PELLAGRA—THE CORN CURSE.

By J. S. DeJARNETTE, M. D., Staunton, Va
Superintendent Western State Hospital.

I offer no excuse for writing this article, even though the medical and lay presses are publishing literature on this subject daily. I believe, unless the most drastic steps are promptly taken to stop the consumption of diseased Indian corn in our corn-eating State, we will suffer the most terrible curse that has ever befallen our fair land. The demon lurks in the green fungus, and there lies our danger.

The majority of lexicographers give pellagra as derived from two words—*pellis,* meaning skin, and *agra,* a seizure; others give *pelle,* skin, and *agra,* rough.

The *synonyms* of pellagra are: Italian leprosy, Lombardy leprosy, Alpine scurvy, Asturian rose, maladie de las teste, mal de rosa, mal de sole, vernal insulation, hydromania, and mal de miserere, etc.

Definition. Pellagra is a skin and spinal disease, endemic in Southern Europe, and found now in Virginia and fifteen other States of the Union. It is said to be caused by eating diseased or damaged maize, is also dependent upon bad hygienic conditions, and exposure to the sun. It is marked by increasing erythema of the exposed skin—worse in spring fading away in winter, exfoliation of the skin, weakness, spinal pain, digestive disturbance, brain and cord lesions, mental depression, great emaciation in last stage, marked tendency to insanity, immobile expression and usually little or no fever.

Etiology. The eating of diseased Indian corn is almost universally believed to be the cause. This theory is ably maintained by Lombroso and Bolardini. On account of the greenish color produced by the fungus, this was called the verdet theory. Belmond believed pellagra to be due to a specific organism. The disease is never found except among a corn-eating population, and in Italy and France, where pellagra is prevalent, it increases in proportion to the amount of musty corn products consumed.

The fungus may develop before the harvest if a wet season, especially if the corn is late and does not have time to ripen. It may attack the grain at any stage—in the field, in the corn crib, at the mill, before and after grinding, and even after cooking; if left for any length of time, the fungus will grow on the bread or breakfast food, etc.

In Southern France and Northern Italy, where the corn meal gruel or polenta is all cooked at one time for the week, the fungus grows rapidly. These countries have heretofore been the most pellagrous in the world. The disease is not contagious in any sense.

History. Pellagra has been known since about 1750, and has been, and is, endemic in Southern France and Northern Italy. From 1830 to the present time it has been thoroughly studied by Strambio, Brierre de Boismont, Baillarger, Billod, Sacchi, Gintrac, Lombroso, and others. Mental derangement frequently accompanies the disease. According to Billod, three-fifths of the insane in the asylum at Astino were pellagrins; in Senarra, one-third, and the same proportion in Servolo, at Venice. Assistant Surgeon Lavinder, U. S. M. H. S., states in his able article on *Pellagra* that in 1907 there were 100,000 pellagrins in Italy and upwards of 50,000 in Roumania.

In pellagrous countries, about 10 per cent. of pellagrins are in hospitals for the insane. Assuming this to be true in Virginia, we have fourteen reported by Dr. W. F. Drewry, of Petersburg superintendent of the Central State Hospital for the insane; four in the Western State Hospital, at Staunton, Va., making the total number eighteen; therefore, we would be justified in believing we have about 180 pellagrins now in Virginia.

Symptoms. The symptoms of pellagra are too numerous to mention. The most prominent are: Recurring erythema in the spring on parts exposed to the sun, subsiding during the winter; ravenous appetite, sometimes horror of food; diarrhœa, usually persistent; great psychomotor retardation, vertigo, feeling of heat and pain along the spine, burning of skin, slight losses of consciousness, extreme apathy, indisposition to do any kind of work or take exercise, intense debility, numbness of lower limbs, staggering gait, upper extremities ataxic, lower spastic, hallucinations of sight and hearing, mutism, immovable attitude (according to Sandwish) the "smile-forgotten face;" slowness of speech, incoherence of ideas, sad delirium, and a fixed idea of despair, stuperose melancholia, delusions, and suicide by drowning. The hydromania is so fearful that one cannot conceive of its intensity. Strambro says: "The intense heat of the skin excites not only directly to immersion in water, but also gives rise to delusions of fire, both in this world and in the next, and the miserable victims plunge into the water to extinguish, at the same time, the real and the imaginary fire."

Gintrac states in traveling through pellagrous districts he was informed that every year many insane pellagrins are found drowned in ponds. Miss Marion Hamilton Carter, in a carefully written article, November number of *McClure's Magazine,* most graphically describes the water-mania. She says: "It is largely through the burning sensations that water comes to exercise a peculiar and often fatal fascination for pellagrins. They love it—love its feel on their bodies, its flow, its shining surface; hang over it by day and dream of it by night. But with the fascination of delight runs the fascination of terror, even in the same patients. The water seems to call them, to hold them in a spell. They cannot withdraw their gaze from it, but look into its depths until nausea and vertigo come on, and they fall into it. In this state, and stunned by the shock, they drown. Some, on coming to a water course, close their eyes and cling to the nearest tree until the vertigo passes; then shamble away in fright, only to be seized with the charm of the next stream, and throw themselves bodily into it. Through all the disease runs the black thread of misery."

Diagnosis. The multitudinous symptoms mentioned above are very confusing, and I think the following are usually sufficient to make a diagnosis:

1. The symmetrical erythematous eruption on the back of the hands and exposed parts to the actinic rays of the sun. The eruption is first very red, and the skin is exquisitely sensitive to the sun's rays, becoming blistered from the slightest exposure. Attendants in hospitals for the insane have been discharged when their patients were found with these blisters, the superintendents believing the vesicles to be the result of scalds while bathing. After the acute stage wears off the eruption becomes scaly, and the skin rough and dirty looking with whitish lines running along its natural folds.

2. The diarrhœa is more or less constant, and has a peculiar odor, probably caused from an inflammatory condition of the entire alimentary tract.

3. Anæmia, immobile expression, shiny,

bright eyes, and indisposition to take exercise.

4. The victims are usually among the very poorest class, who live largely on corn products. Since poverty compels them to buy the cheapest, they usually get that which is diseased.

Pathology. Leptomeningitis is found with much thickening, and even the formation of osseous plaques; the anterior cornual cells of the cord are pigmented and atrophied; postero lateral sclerosis of the columns of Goll and Burdach in the upper cord levels; and the lower portion of the crossed pyramidal tract sharply sclerosed. The increased symmetrical vulnerability of the skin, spasticity of lower limbs, vertigo, etc., I think, clearly indicate we have a poison which attacks the trophic centres, and the insanity indicates special selection of the brain cells. The nerve and brain poisons seem to have a peculiar selection for the skin; we see it in the gin blossom of alcolholics, in the erythema of atropine poisons, and in the papulo-pustular eruption of bromide of potash, and in food poisons causing verticaria, etc.

Prognosis. If the disease is treated early, recovery is said to be easily secured (Lavinder); if allowed to run on, death is the rule in a few years. Seventy-eight per cent. of cases are curable when treated properly. Of the four cases I report, two are dead, and the remaining two will not live very long in all probability.

Treatment. The treatment is to stop all diet of corn products, breakfast foods, meal, etc., and give mixed animal and vegetable diet. Tonics, such as arsenic, quinine, phosphates, and chalybeates, are to be given; careful avoidance of exposure to the sun, and soothing lotions to the eruption. Atoxyl has been recently recommended (Lavinder). A serum treatment has also been suggested; the serum to be gotten from horses which have recovered from "blind staggers," caused by eating diseased corn.

The only scientific treatment of the disease is prevention, and this should be attained by educating the laity in regard to the dangers in the use of musty corn products. All millers who are found grinding musty corn, and storekeepers selling musty meal, should be fined and imprisoned. The school teachers in our State should be instructed to teach the horror of pellagra and its cause. The farmers should have special bulletins sent them teaching the best methods of drying their corn, when to cut it, how to shock it, house it, shell it, send it to mill, and keep it when at home. No cold corn bread should be used as food for man, and all breakfast foods made from corn should be carefully examined before eaten, and none kept over after becoming damp. Dampness from salt water is especially favorable to the growth of fungus.

VIRGINIA CASES.

There have been twenty cases of pellagra reported in Virginia, so far as I can collect—fourteen by Dr. William F. Drewry, of the Central State Hospital for the Insane, at Petersburg; one by Dr. J. H. Hewett, Lynnhaven, Va.; one by Dr. Smith, of Amherst, Va., and four by the writer in the Western State Hospital at Staunton, Va. Ten per cent. of the pellagrins being in hospitals, as I said before, we have about 180 now in the State. While this number seems small, the possibility and probability of the rapid spread of this horrible disease is fearful to consider, and now is the time to fight it.

FEMALE PELAGRIN, WESTERN STATE HOSPITAL, HANDS, WRISTS, FEET AND LEGS INVOLVED.

I know of nothing, not even the great white plague, which will compare with this disease should it once get possession of our land. I say this without fear of being accused of *pellagraphobia.*

We have had four cases of well defined

pellagra in this hospital. One male from Amherst county died in 1908, and his disease was not recognized until after reading the recent discussions on the subject; one male from Halifax county died in 1908, the disease being suspected at the time, but not clearly recognized until a few months ago.

We have now two female patients with pellagra. One has been in the hospital ten years, and developed the disease during last spring. She has been demented for years. She originally came from Louisa county. We received during this month one female from Pittsylvania county, near Danville, in the last stages of the disease. All of these cases came from the poorest classes of people in the State and became demented rapidly. There was nothing unusual in the symptoms of these pellagrins, as they ran the usual course. We have had two additional suspects, but as they improved so rapidly we sent them home on furlough apparently well. We will, however, keep in touch with them. One was a woman from Alexandria city and one a woman from Spottsylvania county.

Why we have never had pellagra in the United States before is a natural inquiry, this being the home of the maize. I believe the fungus possibly has been comparatively recently imported from the infested districts, brought in in the food of Italian immigrants, and would recommend that the government have the food of all immigrants examined immediately on arrival from pellagrous countries.

THE HEART IN ACUTE INFECTIOUS DISEASES.*

By ALEXANDER G. BROWN, Jr., M. D., Richmond Va.

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The heart is always an important factor in infectious diseases. This organ more than any other needs the discrimination of an accurate and intelligent observer in all cases of infectious diseases. There may be the sudden, unexpected, and shocking death, coming upon the stage without premonition, to the distress of the family and to the unutterable sorrow of the physician, due to heart failure. There may be the implantation of certain cardiac processes of more or less permanent kind during the progress of the infectious disease. There may be the termination of the infectious disorder by the heart route, the fatality occurring after the apparent cure of the active infectious process from grave and irremediable pathologic conditions engrafted within cardiac structure.

Every infectious fever, in connection with the main individual factors of its clinical picture, implicates to a more or less serious degree the heart; and not infrequently the cardiac involvement assumes an over-shadowing importance in the symptom complex because of its essential connection to life, to the degree of becoming the chief consideration in the treatment. In speaking of the heart in this relationship, one must not omit the observation that sometimes the already abnormal heart is an important consideration in such processes. It is clinically true, however, that the damaged heart may pass through attacks of typhoid fever, pneumonia, and scarlet fever uninjured and at no time demand such attention as might ordinarily be expected. In fact, there is no general rule for these cases as to the amount of heart complication, its degree of importance in the general clinical picture, or its absolute influence upon the illness under observation. But this much can be affirmed that in all infectious diseases the heart should receive expert and constant care.

The reference in this paper to pathologic findings in the heart must be brief and of a general character as found commonly in the several infectious diseases. The specific organisms of such diseases as diphtheria, typhoid fever, erysipelas, influenza, pneumonia and rheumatism (specific origin probable) effect in general terms much the same pathologic changes in the structures of the heart and they may be summarized as pericarditis, myocarditis, and endocarditis. Embraced in this morbid change with varying degree of intensity may be the several structures making up the heart. The muscle, the vessels, the nerves, the peri- and endo-cardial membranes show more or less serious pathologic changes.

In this discussion no attempt will be made to follow the text-book order in considering the several abnormal processes; on the contrary, it will be the purpose of the writer to draw attention to the clinical behavior of the heart in

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infectious diseases, whether the predominance of change be in one or the other structure. Much the same effect is found in the course of the attack, whether or not the determination of the inflammation be sharply made. In fact, clinically, it is impossible to say that pericarditis prevails without associated myocarditis in more or less amount, or that endocarditis exists without some element of inflammation in the heart muscle. For it is generally understood in cases of bacteriemia the invasion of any one of these structures means the more or less involvement of others.

In the course of infectious diseases the observer should heed carefully symptoms arising from the cardio-vascular circuit. In such cases, the rhythm, the size, the murmurs, the sounds, the pains of the heart, the frequency, regularity, uniformity, strength, tension of the pulse—these symptomatic factors should be carefully observed and skilfully interpreted, or else the gravity of cardiac complication may be overlooked.

The rate of the heart in an infectious process cannot always be explained by the inflammatory conditions prevailing, but when the increase of rate is sudden while other factors seem to point to favorable conditions, and occuring in connection with an altered rhythm, a change in size, the occurrence of murmurs, the obliteration of normal sounds of the heart-rate has a decided bearing upon the heart complication. The detection of change in rhythm is an indication of abnormal muscular action. And it is worthy of note that the usual arrhythmia of nervous origin is usually abolished under the influence of pyrexia. Therefore, clinically, one may be reasonably certain in the presence of fever that an arrhythmia means altered muscular activity. This damage to the muscle may take the form of depression of conductivity, as shown in the intermittent apex beat or the intermittent pulse. The explanation of this rests upon the theory of muscle conduction of systole from auricle to ventricle by the bundle of His. The loss of ventricle action effects a form of heart block, and may be accompanied by mitral murmur and diastolic aortic murmur sometimes. Not only this, but also there may be signs of failing contraction which may show itself in feeble ventricular action in the small pulse, the lost pulse, the weak, the irregular pulse.

Extra-systoles and irregular heart action mean grave myocardial involvement. The size of the heart offers corroborative symptoms of myocardial dilatation. Under these conditions the normal sounds may be faint, abolished, or supplanted by murmurs at one place or another. Soft murmurs in mitral orifice, also at tricuspid area, with abnormal respiratory findings at the base and posterior of the lungs augur bad. The presence of murmurs, without associated changes in action of the muscles as above outlined, directs our attention for all practical purposes to conditions in the endo-cardium.

The mitral systolic and aortic disastolic murmur I consider the most important signs for interpretation. While these murmurs, when relative and accompanied by signs of dilatation, may mean relaxation of the muscle supporting the orifice, yet the faintest blowing murmur should receive proper attention, and its diagnostic bearing and its prognostic significance should be studied. Not that the processes that are bringing about these regurgitant phenomena can always be stopped and that the serious sclerosis and vegetation can be averted, but in many cases the degree of severity can be modified by wise management, and possibly in other cases sudden death from acute dilatation prevented. The to and fro friction sound of the heart means the dry inflammation of the pericardium and is usually accidentally discovered in daily routine examinations. When the pain becomes an associated condition one can reasonably look for myocardial involvement with its clinical symptoms. Pericardial effusion has little bearing on this subject and, therefore, it is merely mentioned.

The Heart in Rheumatic Fever. Literature teems with references to rheumatism of the heart. This indicates its frequent observation in the course of that disease. Indeed, few genuine infections of rheumatism fail to show during the attack, and too often long thereafter, involvement of the heart. Notably in children the heart assumes great prominence in the series of bad symptoms. In fact, I have seen cases in which the heart symptoms presaged oncoming rheumatic syndrome in its completeness. In other cases, I have noted the heart involvement with only the presence of an associated tonsilitis preceding the joint inflammation. While few hearts escape in

rheumatism, the *permanent evidence* of *heart disease* following an attack of rheumatism may be put down as 50 per cent. of cases attacked. The acute inflammation of heart in half the cases subside and let us hope is assauged and cured by treatment. The other fifty per cent. show involvement subsequent to the attack. Church says that cases under ten years of age show largest per cent. of permanent involvement (80 per cent.). The liability decreases with each decade. After forty years only 34 per cent. show fixed heart involvement.

In rheumatism of the heart, the early signs are to be looked for at the mitral orifice in the largest number of cases. The inflammatory changes in the valves may not be the only factor in the production of murmurs, for it is believed that the toxic effect of the blood upon the muscular sphincter of this orifice produces not infrequently earlier symptoms of incompetency. In many cases the entire heart involvement is confined to the left side and to this area, but in other cases of severe kind the involvement may take place in the right side particularly at the tricuspid opening. In some cases where the toxemia appears to be profound the myocardium shows one of two, or both, lesions; there may be dilatation or there may be evidence of toxic action on the muscle in the form of loss of contractility and conductivity of the muscle. While death in the first from cardiac failure is rare, it is not infrequent in those cases of severe secondary attack; in these death may occur suddenly. Often in cases in which the pyrexia is high and the toxic symptoms are profound the destructive effect upon the myocardium is irreparable, and these cases never again become healthy, if they recover after long illness; while other cases come to recovery with sclerotic changes implanted in the endocardium, leaving them cardiopaths dependant more or less upon the myocardium.

Other complications of rheumatism should be given some mention in this connection as they often play an important role in prognosis of the heart in rheumatism. In those cases for instance, in which septic pneumonia appears, the heart quickly feels the added change and the close study of the cardiac cycle is all the more imperative. In cases in which the kidneys show inflammatory changes the heart must early receive the constant attention of the clinician until this block to the systemic circulation is lifted.

The Heart in Pneumonia. In pneumonia no organ requires more constant, discriminating and skilful attention than does the heart. The heart in pneumonia is the crux of the clinical problem. In those cases in which the heart symptoms appear early and assume serious and ominous importance in the clincal picture, denoting the involvement of the heart directly, overshadowing the physical consolidation in the lung, the cardiac phenomena command the stage and require the attention of the clinician. Within a few hours after the rigor in such cases, the pulse becomes very rapid, 115-140 per minute; and is soft, gives no resistance to the finger, collapses after a sharp, quick impulse, denoting asthenia and weakness. At first the heart sounds are sharp and short; later they are faint and muffled, dilatation appears beyond the right of the sternum. Such cases are tragic in suddenness of the death. In three to four days after initial chill these cases come to fatal ending—almost invariably if the cardiac invasion is overlooked and the heart left to expectant treatment.

Again in cases of profound toxemia in which the consolidation in the lung seems totally inadequate in amount to explain the grave condition of the case—those cases of pneumonia in which the pneumococcus septicemia is general as shown in such complications as meningitis, pleurisy, empyema, pulmonary abscess, parotitis, etc.; in such cases the heart needs the attention of the clinician every moment. In cases, heart dilatation may occur with regurgitant murmurs in the pulmonary area with increase in cardiac dullness to the right of the sternum, with failing compensation as evidenced in the venous pulse and by the irregular, rapid, weak, systemic pulse with low tension.

Again, there are cases in which the consolidation is marked, with more than one lobe involved; these cases may come to recovery without a great deal of concern about the heart where conditions are favorable and where no cardiac defect precedes the attack. Crisis in these cases may eliminate the heart factor as important. However, it should not be forgotten that in the convalescence sudden heart failure may occur after the crisis. Much more might be emphasized in this connection but already too much time has been given this subject.

The Heart in Diphtheria, Scarlet Fever and Influenza. In diphtheria the heart muscle un-

dergoes degeneration; pericarditis and endocarditis are unusual. The clinical signs may be summarized by saying that heart murmurs may be heard at the base, systolic in time, and that this is not serious; that rapid heart action with gallop rhythm and sudden drop of pulse from 110 to 40 per minute are ominous signs. Sudden death may occur after cessation of active disease. In some cases after serum injection sudden death may occur. In scarlet fever endocarditis is more common and may be marked by systolic murmur; although there may be systolic murmur without true endocarditis. The chief harmful effect is upon the myocardium as in the other infectious diseases. The striking cardiac element in this syndrome is an accelerated pulse to a degree out of proportion to the amount of fever present. This may be explained by the myocarditis in part, but some observers consider the paralyzing effect of the toxin upon the vagus the cause of this sign. The dangers in this infection from sudden death are not as great as in diphtheria. In infiuenza attention should be constantly upon the heart, as this organ is the site of more or less morbid phenomena. While autopsies have failed to reveal any uniform pathologic changes in cases of influenza yet clinical experience teaches that the heart is often seriously involved. Acute dilatation and sudden death during the attack and even subsequent thereto are not rare, especially in the aged. In cases of influenza of leutic patients the use of the ordinary remedies for control of the pain and fever should be most guardedly given. Functional heart signs occur during the attack and during convalescence: tachycardia, bradycardia, arrythmia, extrasystole, etc.

The Heart in Typhoid Fever. In this disease the circulatory system, particularly the heart, must be carefully watched. The enforced recumbency of the patient during the attack does much to prevent serious ill effect within the heart, but during convalescence the patient's heart may disclose certain adventitious signs significant to the careful observer. If the pulse is unusually rapid upon assuming the erect position, or if it becomes irregular, intermittent, or weak, the prudent clinician requires continued recumbency. When also in connection with these observations, the soft blowing systolic murmur is heard over the base obscuring the first sound, or if there is an accentuation of the pulmonic second sound with impaired resonance in the base of the lungs posteriorly the wise course to persue is to insist upon continued recumbency in bed.

Speaking generally during the course of all infectious diseases and subsequent thereto, during the period of convalescence, the heart should receive the careful attention of the medical attendant. For oftentimes cases that appear to be approaching recovery from infections, without warning enter upon more or less serious and threatening stage due to unseen cardiac involvement. And should sudden end be averted, not infrequently cardiac damage becomes so fixed that irremediable harm results to the heart structure, or the convalescence is drawn out into prolonged illness incident to heart debility.

Believing that no clinical paper should omit mention of *general measures of treatment* I beg in closing to make a few suggestions in this connection.

At once we recognize that in infectious diseases the mitigation of all serious complications rests in the hope that soon we shall command a specific vaccine or serum for each of these processes. While now there is little we can hope to accomplish in the way of preventing heart involvement in these cases, yet there is much to be feared in the total neglect of cardiac conditions.

In all these cases rest is imperative. Rest should be absolute and constant. This is as much a therapeutic agent of precision as the most important drug that demands exactness in dose and administration. This must be maintained for the myocardium; that muscle so afflicted with relentless duty at high rate and under toxic conditions. General observation of the body must be maintained. Nutritious diet, such as build up the tissues without unnecessary bi-products of toxic kind, should be given. Proper heart tonics (not always digitalis) should be prescribed. In the administration of heart remedies no law can be laid down; each case with its peculiar clinical conditions demands its own therapy.

To summarize, I desire to draw attention to the constant presence of serious cardiac involvement in infectious diseases, to impress the importance of early recognition of the heart signs, to intelligently interpret their significance; and, lastly, to do what the case requires to prevent fatal issue, and to prevent permanent heart disease.

1135 *West Franklin St.*

A CASE ILLUSTRATING THE SUCCESSFUL TREATMENT OF PARASYPHILIS.*

By TOM A. WILLIAMS, M. B., C. M. (Edin.), Washington, D. C.

One of the strongest evidences against the syphilitic nature of locomotor ataxia and paresis has been the apparent failure of antispecific treatment to benefit them. The following case is cited in order to show that this attitude is not justifiable. It will appear from it that sufficiently early diagnosis is an important factor in the successful treatment, and that the method of administration of the remedy plays a large part in its success. Moreover, iodides are relatively inefficient as compared with mercury; for each, when given by the mouth, disorders assimilation, and the latter may be given endermically or by injection with even greater systemic effect than by the mouth.

The mere giving of a drug, however, is not all the treatment; for the diet must be most carefully controlled in order to avoid the intoxicative processes which so retard assimilation; and nutrition must be stimulated by adequate exercise, which will secure periodic flushing of the tissues with highly oxygenated blood.

The case was seen with Dr. Main, of Washington, at the suggestion of Dr. Prentiss, of that city, October 30, 1908. He was a man of 54, a farmer, who had been in a "neurasthenic state" since the spring, for which rest, change, and a sea voyage had been prescribed without more than temporary benefit. He complained of insomnia, general nervousness and a state of suffering, incapacity and irritability.

The family history was negative.

Previous History. His wife is living and healthy. There were no children or miscarriages. He denies syphilis, but some years ago had typhoid fever, during which he lost his hair, which has now grown. When closely questioned he recollects having been subject to spells of depression every few years, and also to periods of activity and energy, which he strikingly describes as "wanting to get at it." He had noticed no change in his speech.

Present State. When seen by me, he appeared neither depressed, shaky, nor apprehensive, though the previous day he had felt perturbed, and despaired of recovery. His chief trouble was insomnia.

Physical Examination. In spite of the cold of the room, the window having been widely open, when he was stripped for examination, perspiration appeared in both axillæ and down the internal border of the left arm; later some drops appeared on the left leg. This want of correspondence of the sudorific function with the stimulus of heat, and the local, if not segmental, distribution of the anomaly indicated a serious perturbation of the autonomic nervous system. The localization of the disturbance moreover, signified organic involvement rather than general toxemia. Facial, tongue, and ocular movements were steady.

Motility. The muscular power was strong, but the movements were slightly incoördinate, especially in the right hand; and when the arms were extended there was a rhythmical tremor which became irregular during the maintenance of the attitude. The diadokokinesis was hardly impaired. The platysma trembled when the mouth was pulled to the right.

Sensibility was intact except that in the left lower extremity L. V. and S 1 were insensitive to the diapason. A similar anesthesia existed over the distribution of the posterior primary divisions over the sacrum. This shaded off above as far as the second lumbar spine, where the vibrations were normally perceived.

Reflexes. The pupils contracted, both to light and accommodation, but in each case tended to re-dilate while still stimulated. The left pupil was slightly irregular. On the right side, the radial reflex was active and that of the triceps was feeble. On the left side, the radial reflex was feeble and that of the triceps was active. The Achilles jerks were equal. The left knee-jerk was exaggerated; the right was diminished. Both abdominal reflexes were diminished, especially the left, which was almost absent. The cremaster reflexes were very faint and sometimes crossed. On stroking the sole of the left foot, the toes flex and the tensor fasciæ femoris contracted; the right foot dorsi flexed and flexion

*For details concerning the *diagnosis* of such cases, see the author's contributions, entitled The Early Diagnosis of Tabes Dorsalis (*Arch. of Diagnosis*, N. Y., July, 1909); Psychometry in the Diagnosis of Cerebral Disorders (*Internat. Clinics*, do). Concerning *Pathogenesis*, see *Path. of Tabes Dorsalis* (*Am. Jour. Med. Sci.*, 1908, Aug.) and *Va. Med. Semi-Mo.*, do). Concerning *treatment*, his articles in *Med. Record*, April, and *Brit. Med. Jour.*, Oct. 2, 1909; also *Trans. of Tri-State Med. Assn.* 1909.

of the toes was scarcely appreciable; though the tensor fascia femoris contracted actively, there was no response with the Oppenheim and Gordon methods.

Speech. He said there had been no change; but it was drawling, slithering, and there was now and then a catch in a word or letter, and sometimes a repetition of such commencing consonants as C and D, and such words as "not" and "denied." The test phrases were all well said. The writing, for an educated man, son of a physician, was rather irregular and unpunctuated.

Psychic Examination.—Memory. Failed consistently to remember eight figures; sometimes failed with seven. Could remember six letters, but not seven. With Winches 12-letter position test, after an interval of forty seconds he scored thirty; but when sixty seconds elapsed his scores averaged only twenty-one out of a possible thirty-six. Memory for connected narrative was not impaired and dictation was accurate.

Calculation seven from a hundred test required eighty-five seconds, and was correct until sixteen when he answered eight on two occasions. On the first attempt after reaching 79 he said 62; and although hesitating and apparently confused, he was conscious of a lapse, and recommenced. The second test was completed in forty seconds.

Generalization and judgment were not tested from lack of time; but insight seemed lacking, for in his manner he portrayed no consciousness of the gravity of his situation, during my examination, at least; although Dr. Main tells me that he has been often much discouraged by his illness, and the patient himself informed me that he felt a lack of interest, which begins with a peculiar feeling in the abdomen, as if everything there were in motion—a twitching, like the sensation occurring after a debauch. This is followed by a sinking feeling and unhappiness.

He was advised a regime, and he forthwith began to take one-third of a grain hydrargyri succinimidi every other day. He began to sleep much better, and to be less irritable and nervous. At the wish the cerebro-spinal fluid was examined and was reported to be clear and free from cellular elements after a single examination.

On November 13th, the perception was tested by pictures I use for the purpose, each of which contains an impossible conjunction, such as smoke and trees blowing in different directions at the same time, a horse drawing a load up hill with a slackened chain, shadows in wrong position, a person looking out of a window situated in a chimney stack from which smoke is issuing, a man watering flowers with a broken hose—all very glaring faults. Although he remarked upon the occasional and irrelevant peculiarity of the drawings, in no instance did he detect the absurdity portrayed.

Mistakes at 51-43 and 29-21; 110-7, time 30 seconds. A division was inaccurate.

His recognition of lengths was only one millimetre in error, and this can hardly be called abnormal. After five minutes' study he remembered perfectly twelve nonsense syllables, and reproduced them in order. He was only inaccurate in two places when he endeavored to replace in order eight words seen one minute before; with a second set of eight, only two sets were correctly placed, although he believed it the more exact reproduction of the two. From a list of twenty words, he picked out eight previously seen, making only one error of insertion, and being uncertain of another word. Neither of these tests indicates serious abnormality. Later, in taking seven from a hundred, he was correct in thirty-five seconds, though he hesitated a little. He then repeated the test without hesitation in twenty-five seconds. The speech showed now an occasional doubling of a labial, a substitution with rapid correction, such as "exped-expectations," and the omission of a word in a difficult phrase, as, for example, "annoys" from "what noise annoys a noisy oyster most."

I could not elicit the arm reflexes and found that the right patellar reflex responded only on reinforcement. The right pupil reflex was quite sluggish, especially on the nasal side.

Examination with a lens showed irregularities of both pupils, especially the left.

There was trembling of the naso-labial folds palate and right eyebrows when the mouth was open. There was no ataxia.

I had no difficulty in making a diagnosis—the precursors of general paralysis of the insane, the physical symptoms pointing strongly towards a syphilitic (parasyphilitic) affection of the nervous system. Pupillary irregularity, failure to maintain reflex impressions, and seg-

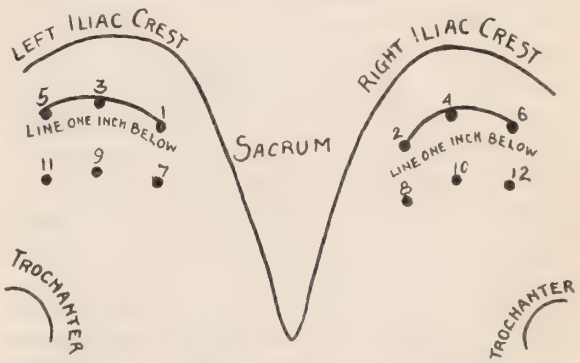
mental sluggishness are almost pathognomonic. When lateral inequalities of the reflexes occur without symptoms indicative of peripheral neuritis or muscle involvement one must strongly suspect spinal-root disease and the sensory less in L. V. and S 2 strongly corroborate this. The trembling of the hands and face are important indices of the extensiveness of the morbid processes, and the speech defect is suspicious of the disease in question.

But it is not until we examine mental functions that the diagnosis is assured; and it is by psychometric methods, and by them only, that this case shows the gross failure of perception demonstrated by the tests with the pictures of impossible conjunctions, the quantitative diminution of memory, and the errors of calculation, small and occasional, though, the last are.

The patient was again seen in the spring. He had performed five months of hard work on his farm, never having felt better, but "began to feel nervous again" for some ten days. Another mercurial course was advised—this time grey oil being given every five days. Fifteen injections comprised the course. He quickly responded and worked again during the whole summer. He was again seen in November, 1909, towards the end of the third course of injections. He complained that during the last fifteen days he had been nervous, had slept worse, and was losing weight. A complete physical examination revealed no localized invasion of the meninges, central parenchyma, or peripheral nerves. Indeed, there no longer existed the manifest diminution of sensibility in the left fifth lumbar and first sacral regions which he had presented when first seen. He had, however, undergone very unusual exertion for some weeks, having taken long journeys to replenish his stock of cattle, and I believe that this was the cause of his setback, and that a short rest will completely restore him.

Technique of Treatment. A short account of the technique of treatment may be instructive.

One may choose either the soluble salts of mercury, or fine emulsions of the metal or insoluble salts. They are made with olive oil and lanolin or parolein in such proportion as to remain solid at ordinary temperatures so as to prevent precipitation of the suspended mercury. On warming to 98° Fahr., they melt sufficiently to be drawn into a hypodermic syringe. About 10 minims of the emulsion is a convenient dose, and this should contain about one grain of metallic mercury or calomel, the latter being the more active preparation. The syringe should be entirely of glass and must be cleaned in warm sterile olive oil before putting it away. The needle should be of platinum-iridium, for a steel needle quickly corrodes with the mercury, and then may break off in the patient's tissues, a complication not to be desired. The administration should take place at least once a week, as complete absorption usually occurs within that time. It is made preferably in the buttock, left and right sides being used on alternate weeks. The same spot should not be chosen for each administration. A convenient method is to draw an imaginary line of two fingers' breadth below the crest of the ileum, beginning an inch from the sacrum, making the three successive injections each an inch laterally to the preceding alternately on each side. At the end of six weeks the process may be recommenced one inch lower down than the preceding. Thus:



The same precautions are advisable in using the soluble preparations, which must be administered every other day. About 10 minims of the solution should contain from one-twelfth to one-sixth of a grain of mercuric chloride, or even up to one-third of a grain of mercuric succinimid, a preparation preferred by some physicians. But in my experience, simple chloride gives no pain to speak of when a fine needle is used. Of course, this must be of platinum-iridium or corrosion roughens the needle, and unnecessarily tears the tissues. It is not even necessary to make the solution isotonic, simple distilled water being adequate.

As absorption is rapid, a dose must be given at least every other day; and about thirty injections are usually administered.

A still more rapid and intense method is the intravenous. A similar soluble preparation is used, some physicians preferring the cyanide salt of mercury. Its disadvantage is the respiratory spasm as it reaches the medulla, and I personally prefer the chloride. Great care must be used that the point of the needle is really in the vein, and the only way to insure this is to withdraw a drop of blood immediately before the injection. Of course, the vein is made turgid by a light tourniquet. The most convenient spot is the median cephalic, or basilic vein. If the solution is injected around the vein a painful and sometimes dangerous, phlebitis may occur. I, myself, use a needle of exceedingly fine calibre made by Gallante, of Paris, but many therapeutists use a needle of ordinary hypodermic size.

1758 *K Street.*

A CURSORY REVIEW OF PULMONARY TUBERCULOSIS.*

By BITTLE C. KEISTER, A. M., M. D., Roanoke, Va.

In view of the great importance attached to the subject of pulmonary tuberculosis in the recent past and the extreme and diversified theories and opinions held by eminent scientists, medical text-book writers and fellow practitioners of medicine, I come before you with some degree of trepidation in attempting to grapple with such a monster subject.

More than a hundred years ago this monster tyrant was recognized and treated as a contagious and dangerous disease and its victims were shunned and rigorously isolated. Three restrictions were enforced in Portugal and also in the city of Naples. The physicians were required by law to report all cases of consumption and were liable to heavy penalties for their failure to do so.

All consumptives, as previously mentioned, were isolated, and their clothing, the furniture of their rooms, and all the ordinary articles used, were destroyed after their death. The rooms were also thoroughly cleansed and purified. These laws were rigorously enforced for more than fifty years. (Bonny).

Notwithstanding these facts, this great plague continued unabated and undaunted in its devastating career, spreading the death-laden germs throughout all Europe. These same restrictions, with many more added on, have, for the past quarter of a century been enforced in our own tubercular stricken country, and yet the great plague is still roaming, claiming his victims to the sad tune of *one out of every seven of the deaths that occur in the entire world* from all causes, including war, famine, pestilence and alcohol.

The every day experience of pathologists connected with our leading scientific schools and institutes, in the recognition of healed and unsuspected lesions in the lungs and other parts of the body, is sufficient evidence to demonstrate the wide prevalence of non-active infections as well as the inherent powers of individual resistance.

Statistical observations concerning the frequency of tuberculous lesions, found during post-mortem inquiry have varied considerably, according to the thoroughness with which all parts of the body have been explored. During recent years these researches have been conducted in a more systematic manner than formerly, and reported cases of latent infection are far more numerous. Naegeli's statistics upon this subject obtained from the critical study of five hundred autopsies at Prof. Ribbert's institute at Zurich, are particularly startling. After carefully inspecting every organ of the body including the lymphatic glands as well as examining a large number of microscopic sections he reports the finding of tuberculous lesions in 97 per cent. of all the cases up to the fifteenth year, 96 per cent. up to the eighteenth year, and nearly 200 per cent. up to the fortieth year. These results apparently corroborate the popular German belief that every person possesses a slight focus of tubercular infection.

The obscure localized lesions, affecting the vast number of human beings compared with those actually succumbing to pulmonary tuberculosis, affords a striking commentary upon the effectiveness of self-immunization. In this connection it is not only necessary to consider the many individuals who perish annually from the disease but also the myriads of those whose ca-

*Read before fortieth annual session of Medical Society of Virginia, held at Roanoke, October 5-8, 1909.

pacity as wage earners is restricted. The number thus afflicted is truly appalling, and in nearly all countries, exceeds in economic loss and human suffering all other combined agencies which contribute to the pathos of fate.

When we consider the working power of labor which constitutes the chief commodity of State, it is not difficult to comprehend the tremendous depreciation of economic resources entailed by the ravages of such a disease. Even without regard to the magnitude and depth of human suffering, the deprivations and blighted prospects incident to prolonged illness, the dismemberment of families, and the agony of heart and mind, *the glaring fact remains that the prevalence of pulmonary tuberculosis constitutes* a *national.* a *racial,* and a *social problem,* comparable to which none other is worthy of consideration. It has been carefully estimated that over 1,500,000 people are annually incapacitated for work in the United States on account of this one affliction. One hundred and fifty thousand is a low estimate of the number of lives directly terminated in the United States each year by tuberculosis.

The average age at time of death is computed at thirty-five years, thus enforcing an annual preventable loss to the nation of many years of future industrial activity, approximating one-half of man's average existence. If the value to the State of each healthy inhabitant during the entire period of usefulness is estimated at $1,000, the economic loss in one year from deaths so premature will approach at least $500 for each individual thus removed, making an annual drain of $75,000,000 upon the United States from this source alone. This is entirely exclusive of the additional expense necessitated for the maintenance of charity organizations and the demands imposed by the disease upon private benevolence.

The above figures form a very conservative estimate of the potential loss each year in the United States from a cause admitted to be within the limits of prevention. The computation of many students of political economy and observers of medical conditions estimate the financial loss to this country as a result of tuberculosis, to vary from $200,000,000 to $400,000,000 each year. In New York City 15,000 people die annually from this disease, and about an equal number die annually in the States of Illinois and Ohio. In New York City, in 1905, 32,000 cases of tuberculosis were reported to the board of health. In Austria the tuberculin test has recently been employed upon healthy soldiers with a positive result in 60 per cent. of those who were presumably well, thus demonstrating the fact that a latent focus of tubercular infection existed in each one of these apparently healthy soldiers.

If this test were used in this country among the apparently healthy no doubt a like result would be obtained. We can readily see how appalling this condition of things would appear, and how important it is for the medical profession to begin the great fight of educating the public along the lines of hygiene and sanitation as a preventive measure against the spread of tubercular infection.

When we consider the astounding facts that over one million human beings have this year, of 1909 surrendered their lives to this arch enemy, including over one hundred thousand of our own people in the United States, twelve thousand in the City of New York alone, aggregating an average of about three thousand persons each day in a year, with a possibility of indefinite continuance of these conditions, is it not high time for every father, mother, and child to buckle on the armor of warfare to save our nation from parasitic decay and destruction?

I have endeavored to portray, in a conservative manner, the great havoc that this greatest of all scourges is playing with the human family, and will now proceed to give a few additional ideas of the nature and chief characteristics of this malady before offering some plain but scientific facts for its prevention and extermination. Before going to war with so formidable a foe it might be well to ascertain, if possible, the strength and chief traits of our enemy, giving due consideration to the various lines of procedure, the modes of invasion, the habits and even the topography and climate of the country. Until this is done we cannot expect as good results from our efforts toward the overthrow of this king of all diseases.

We are all familiar with Dr. Koch's discovery of the bacillus tuberculosis in the year 1882, which revealed to the world not only the hiding places, but the habits, actual work-shops and full paraphernalia of this secret foe. By an original method of differential staining, Dr.

Koch succeeded in isolating the tubercule bacillus and demonstrated its presence in infected areas in all parts of the body. Previous to this characteristic tubercle formation had been recognized in the scrofulous affection of glands, bones and joints, although the precise infective agent had not been disccovered. The recognition of the nodules or tubercles in the lungs was obtained about the middle of the seventeenth century. At the beginning of anatomic investigation with the discovery of cavity formations and pus collections, numerous conjectures were offered as to the pathogenesis of the disease.

The first efforts toward the innoculation experiments were made in the beginning of the nineteenth century, but were not attended with clearly definable results. Virchow cleared the atmosphere to some extent by expounding the pathologic and histologic structure of tubercle. Villemin in 1865 conducted a series of innoculation experiments of the greatest value. In addition to introducing into animals an infective material obtained from tuberculous tissues and from the sputum of consumptives, he injected into a second group some non-tuberculous pus, and in a third a caseous matter from tuberculous cows. A tubercular deposit was found after these injections, confirming the theory of the specific infectious nature of the disease.

It remained, however, for the distinguished Dr. Koch to demonstrate the absence of tubercle in other than tuberculous conditions. He even accomplished the successful innoculation of animals from pure artificial cultures of tubercle bacilli, after the elimination of all extraneous elements, and the removal of all accessory sources of error. Dr. Koch thus established the real cause of tuberculosis among man and animals by the discovery of the bacillus and confirmed by the results of innoculation experiments.

The apparent etiologic identity of all forms of tuberculosis in different species was determined also upon the basis of the characteristic histologic structure of the primary tubercle. Recently a mass of evidence has been presented by numerous observers, both for and against the acceptance of essential differences in the cultural characteristics, virulence and powers of transmission. While we are of the opinion that human and bovine tuberculosis have the same origin and can be transmitted from one to the other, yet there is great room for speculation; but suffice it to say we are more interested in eradicating it from our fellow creatures, whose lives are more precious than gold or silver, than we are in eradicating it from the lower animals.

In this connection, if you will permit the digression, I am of the opinion that every up-to-date physician should be able to use and own a first class microscope with an oil-immersion lens that he may diagnose his cases at his office instead of sending specimens off to the specialist. There is no good reason why every general practitioner who has any aspiration to keep abreast of the times, should not do his own bacteriologic work. The diversion from the routine part of his work and the fascination of spending at least one afternoon of each week in laboratory work, saying nothing of the consolation of being able to diagnose his own cases without outside assistance, is sufficient to amply reward him for the outlay in the purchase of a microscope with all the necessary equipment. Of course, if he expects to do good and satisfactory work, he should take a special course in microscopy and bacteriology, provided he did not get this knowledge in his regular college course.

In the study of the tubercle bacillus in its various aspects, we find some very important features to consider, not only in reaching a clear diagnosis, but also in making a prognosis. In studying the anatomy of the tubercle bacillus we find the length varying from one-fourth to one-half the diameter of a red blood corpuscle. This difference in length and shape varies with the virulence and stage of the disease. Short and thick bacilli indicate great virulence, and when clumped together in schools the virulence is even greater; while if the bacilli are long, flexed and scarce it indicates a chronic condition of long standing. There is also a marked difference in the anatomy of bacilli from sputum and those from culture growth.

These little pointers I have learned partly from actual experience in my laboratory work since taking a special course in research work at the Pathologic Institute in Berlin, and consider them worth remembering.

Having in a crude way searched out the real cause and working force that destroy the living tissues of the vital parts of our organism (the tubercle bacillus) we will proceed to show some of the chief modes of contagion, the main routes and thoroughfares traveled by this marching army of destructive parasites whose

camps and temporary abiding places are found in every nook and hamlet throughout the world. Only recall some of the myriads of sources from which this infection is carried and spread over the country. Go with me, if you please, to the workshops and the parasite-producing industries of our cities!

First among these are the dust-producing trades which cause many of the various throat and lung diseases. Take the cement factories that are now springing up all over our country and whose business it is to manufacture dust. The workers are surrounded by, and work in, an atmosphere made foggy with small particles of quicklime, which makes up the major part of the commercial product called cement. Add to this the fact that the workers, in order to adjust the machinery, and keep the equipment going, must be constantly exposed to the sheets of flame that keep the massive cylinders red hot, and you will have only a faint idea of the cement worker's life. The clouds of curling dust arising from these factories can be seen for miles away. This dust, when inhaled, produces an irritation of the mucous membranes of the mouth, nose and throat, and is also carried to the bronchial tubes and lungs, setting up irritation of these organs, and producing a raw surface for the direct invasion of the tubercle bacilli.

The cement factories of America might well be called the homes of tuberculosis. This applies with equal emphasis to the fertilizer plants, glass factories, cotton mills, coal mines, etc., etc. In glass factories, children do a large part of the work, and while the father is breathing quicklime dust in the cement factory his child is breathing pulverized glass in the glass factory. The one eats the tissues of the lungs, the other irritates them, until they are in a receptive condition for any germ disease. In the coal mines, while the fathers are being crushed, crippled and killed their children are working in the coal-breakers above. For ten or eleven hours a day these children of 10 or 11 years of age, stoop over the chute and pick out the slate and other impurities from the coal as it moves past them. The air around them is so black with coal dust that they are compelled to wear lamps on their caps at noonday in order to see the coal which is moving under their feet.

Many of these children contract miner's asthma, and finally develop pulmonary tuberculosis. There are now in this country 42,000 children employed in mines and quarries. Eighty-two thousand children are to-day breathing the lint of cotton mills in the United States. Five thousand three hundred and sixty-five are breathing pulverized glass from glass factories. Eleven thousand four hundred and sixty-two are steeping their systems in the nicotine of tobacco factories.

In the laundries of our countries little girls and young maidens are standing all day sorting filthy linen or feeding flat-pieces into a hot mangle where the heat is so intense that they are compelled to work almost without clothing. Many times they are worked far into the night and must return to their homes through the dark and deserted streets of our cities, and in all kinds of weather, uncared for and unprotected. We can readily anticipate the risk these young girls run in leaving these steam-heated apartments and rushing out into the crisp, wintry night air, trudging their way through the snow or rain to their respective homes in some distant, and perhaps unsanitary, part of the city.

Are these not favorable sources for the propagation and spread of tuberculosis? Those industries which employ little children just long enough to sweat out their vitality, leaving them diminutive little wrecks to drift aimlessly through a long, dependent life of poverty and disease, should be classed as social parasites and should not exist in any civilized country.

We might cite hundreds of such sources where the constitutions of the youth of our land are ground up in these mills of commerce. After going through these various processes of grinding there is barely enough constitutional vitality left to survive that age when tuberculosis and other contagious infections are most apt to attack and swallow them up. It is usually when the constitution is run down and at a low ebb that tuberculosis is most liable to be contracted. One of the chief characteristics of the tubercle bacillus is to grow and multiply where the soil is suitable. Weak constitutions furnish this kind of soil. We find these weaklings in all lines of trade, the great majority of whom, if put to the von Pirquet tuberculin test, will be found to have tuberculosis. These weaklings can be found in candy factories, where the *fly* is a constant visitor and onlooker, and is ever ready to deposit his share of infec-

tion on the candy that we purchase from the confectioners.

Over half a million bacilli have been found in one tiny speck, and his flyship is capable of carrying over 6,600,000 bacilli on his legs and wings. One person who has tuberculosis in the worst stage is capable of expectorating in a single day over one billion of the bacilli. We have similar conditions to the above in our bakeries, where possibly the head baker is a victim of tuberculosis, and with his usual *domestic* companions, the flies, contributes a large share of this infection, in the way of deposits, to the bread we eat on our tables. The same rule applies to our tailor shops, where tubercular cutters or seamstresses are constantly, but unwittingly, infecting the clothing we purchase from them; the bargain counters in some of our large department stores, the "cheap john" clothing stores, the unsanitary confectionery and grocery stores, ice cream saloons, common restaurants, fruit stands and stores, moving picture and vaudeville play houses, waiting-rooms and toilets in railroad stations and other public places, staterooms in steamships, and berths in Pullman sleepers. There are set free in the United States every year one hundred thousand prisoners from our jails and penitentiaries. Over 25 per cent. of these have some form of tuberculosis, and are allowed to roam the country, spreading the infection as they go. When we consider a company of 25,000 advance agents from this one source spreading this deadly infection over our country, should we not appeal to our national government for help?

These and thousands of other sources that could be mentioned in the same category are the homes and common dwelling places of the tubercle bacilli. They are carried to places by the victims of tuberculosis and the common house fly. The infection, when once housed in a locality where the soil is favorable, is very hard to exterminate. The way by which this infection is spread and taken into the system is by the sputum of persons who have tuberculosis. This sputum, after drying on the floor, sidewalk or street, is taken up as dust by the draught of air or gust of wind and sent on its deadly mission, to be inhaled by any passerby, and, if lodged in suitable soil of the mouth, nose, throat or lungs, in the course of a few weeks or months these victims go out on the same mission, spreading the same infection, as well as adding recruits to that great army of millions who have gone before to that bourne whence no traveler returns.

Having merely touched upon the chief points of this mammoth subject, giving some of the leading characteristics that should claim the attention of the medical profession in the fight that is now being made, I shall conclude my paper by offering a few suggestions along the lines of prevention and extermination of this world-wide scourge that is now challenging the skill of the whole medical profession.

One of the strongest and most important preventive measures against pulmonary tuberculosis is the careful management of the children of tuberculous parents or grandparents. There is beyond all question a predisposition to this disease in such children, also in adults who are the offspring of tuberculous parents or grandparents. The constitutions and general welfare of this class should excite the interest of not only the immediate relatives and friends, but of the family physician as well. While I do not believe that the disease itself is hereditary, yet I am fully convinced that there is strong hereditary tendency. When this tendency exists accompanied by anemic conditions, low vitality, loss of energy, loss of weight, slight cough or constant clearing of the throat, dyspeptic symptoms, loss of appetite, tired feeling, slight evening fevers, etc., there is good ground for suspicion of beginning tuberculosis. Where there is much doubt and anxiety on the part of friends and relatives, it might be well to use the Von Pirquet tuberculin test. If a positive result is found, this class of patients should take a course of building-up treatment until all the worst symptoms are cleared up; then advise a climate of pure, dry atmosphere in a high altitude, where such persons can spend the rest of their lives in ease and comfort following their ordinary avocations. This is the proper climate for all persons who have an inherited predisposition to pulmonary tuberculoiss.

One other important preventive measure should be inaugurated in every country throughout the world. I refer to the prevention of marriage of all those who have pulmonary tuberculosis. While such a law, if inaugurated, might at first seem radical, yet it would prove a step in the right direction

toward eradicating the disease and saving future generations from the blight of this curse. It is a well known fact that the married state hastens the progress as well as the spread of the disease. If we wish to be sure of success in our fight, we must use some strategy and diplomacy in searching out and capturing the victims who are the advance agents in the spread of this deadly infection. These should be caught if possible while in the incipient stage and placed in sanatoriums where they can be treated scientifically until cured. Eighty per cent. of all cases in this stage who have fairly good constitutions can be cured. In the other more advanced stages of the disease the victims should not only be captured, but quarantined under the same restrictions that govern other contagious diseases, such as scarlet fever, diphtheria, etc., none of which is comparable in death-spreading qualities to pulmonary tuberculosis. The question naturally arises, can these plans be carried into effect? Have we a right to curtail the privileges and rights of our fellowman along these lines? And is it humane to thus cut off from the social world those unfortunate people of our own woof and blood? These are the greatest as well as the most far-reaching questions to answer in lining up our forces for the battle that is now approaching.

As previously mentioned, without a full supply of strategy and diplomacy, these plans cannot become effective, notwithstanding all the combined forces of the medical profession backed by the governments of the respective nations of the entire world. The three most important essentials in this fight are *education, means* and *diplomacy*. Education is necessary for the victims of the disease, for the general public, and for those who are expected to do the fighting. Educate the consumptive by telling him first of his real condition and then teach him to co-operate in arresting his disease and preventing the spread of *his infection to his fellowman.* Teach him the laws of self-preservation, habits of cleanliness, personal hygiene, and how to avoid taking cold, and to live an out of doors life in suitable weather, both day and night, wearing suitable apparel for body warmth; to take tepid and friction baths, to regulate a diet that will sustain and nourish all the organs of the body, and to keep the secretions and excretions in as normal a condition as possible, avoiding all things and influences of a deleterious or depressing character and seeking those influences that are elevating and of a cheerful nature; administering only such medicines as are indicated by the symptoms of each individual case.

We have in guaicol and iodine with their respective derivatives, two of the best and most suitable medicines for the treatment of this disease that have as yet been discovered. When properly compounded they can be used by forced inhalation, as well as taken internally and externally. With the proper administration of these two germicidal weapons, reinforced by a bounteous supply of pure, fresh air and wholesome nourishment, any ordinary case in the incipient stage should be arrested within twelve weeks.

Teach the patient the use of the thermometer that he may keep a record of his most important symptoms, reporting same at regular intervals, and to avoid taking active exercise when his temperature is at or above 100 degrees. In short, give him a full set of specific rules and regulations in typewritten form to follow, and instruct him to impart these to his friends and acquaintances who may be victims of the same disease.

We should also educate the immediate relatives and friends of the patient, as well as the general public, along the lines of hygiene and sanitation. The starting place toward educating the masses is in the public schools. One week in every three months should be devoted exclusively to the study of hygiene and sanitation, in addition to those studies in the regular curriculum, requiring each teacher to prepare a special course to be taught to all the pupils, both small and large, during these special weeks. The teachers should also require the pupils to recite to their parents the same lessons on hygiene and sanitation that are recited to them, and in this way educate parents as well as children on these important subjects, preparing them as if for a *thirty years' war.* The playgrounds should be carefully selected and the importance of open air exercise impressed upon each pupil of the school. These principles should also be taught from the rostrum and the pulpit by men fitted for this purpose. Education, as previously mentioned, is only one of the main essentials toward the prevention and extermination of this dread disease.

The next important essential is the *means*

by which to establish sanatoria for the three classes of patients who are victims of this disease in its three respective stages. There should be in each county or city of 50,000 inhabitants three sanatoria—one for those who have tuberculosis in the incipient stage, and are curable; one for those who have the disease in the second stage with a possible chance of arresting it, and one for the third or incurable stage.

Where it is feasible, several counties or cities might combine funds and establish these sanatoria under a joint corporation. These sanatoria should be established by the State governments, assisted by the national governments; hence, *the importance of legislation!* Let the medical profession as a unit work to this end, and it will be only a matter of time when the laity will fall in line and thus assist in taking the matter up with our law makers.

To accomplish all this it will be necessary to use a large amount of diplomacy. The best talent, tact, and influence should be brought to bear upon the laity, the law-makers, the public benefactors and the wealthy consumptives of this country. This latter class may not be disposed to give up their individual rights and privileges for the mere sake of humanity by condescending to live in a public sanatorium, yet if the proper influences are brought to bear upon this class, and with some diplomacy, we may not only conquer them along the line of submission to certain rules anl regulations of the open air sanatorium, but we may, by conciliation, induce them to give a part of their means toward the equipment anl endowment of these humane institutions.

In this connection I would suggest that a special committee of two well known members of this Society be appointed from each county in the State, to act in conjunction with our Legislative Committee, in bringin~ the matter of establishing county sanatoria before each of our county Legislators, State Senators, the Governor of the State and some of our wealthy public benefactors, reporting the results of their efforts at the next meeting of this society.

Book Notices.

International Clinics. Edited by W. T. LONGCOPE, M. D., Philadelphia. Volume III. Nineteenth series. Philadelphia and London. J. B. Lippincott Co. 1909. 8vo. 296 pages. Cloth.

This is the third volume for 1909 of "a quarterly of illustrated clinical articles" by leading members of the medical profession throughout the world. Even the table of contents for this volume is too lengthy to repeat it in our limited space; but each of the subjects treated is presented in a most practical manner, and many illustrations throughout the text add value to the clinical descriptions. As usual, this volume has an article or two or more on nearly all of the various branches of medicine—on treatment, medicine, surgery, gynecology, obstetrics, etc.

Treatment of the Diseases of Children. By CHAS. GILMORE KERLEY, M. D., Professor Diseases of Children, N. Y. Polyclinic Medical School and Hospital, etc. Second Edition Revised. Philadelphia and London. W. B. Saunders Co. 1909. 8vo. 629 pages. Cloth, $5 net. Half Morocco, $6.50 net.

The first edition of this most valuable, practical book proved so popular because of its *practical* teachings that the author has availed himself of the opportunity to make this second edition even more useful for the *general* practitioner. It is not intended as a student's text book, but as an everyday guide book for the doctor in need of consultation. The author's experience, it is true, covers over a decade of active practice in families, clinics, hospitals, etc., and years ago established a reputation of eminent authority. This is a book of constant service to the doctor; and as its size indicates, includes descriptions of all phases of diseases of children common in this country. It is well indexed.

Editorial.

What the Medical Profession Has Done, and is Doing, for the State.

It stands as a lamentable surprise to note how little the State of Virginia has done for its medical profession—especially when one takes a retrospective as well as prospective view of its accomplishments for the welfare of its citizens. The life work of the true doctor has been along the line of scientific study of diseases—how to recognize them, how to treat them and *how to prevent them.* Not only have researches along the line of therapeutics—

medical and surgical—resulted in the saving of many lives, and restoring to business life many who, in former years, would have died or else have been permanent invalids as a care and expense upon families and communities; but study in recent years has taken up the subject of *preventive medicine* and has resulted in the lessening of endemic and epidemic diseases, especially, to such an extent that thousands of lives and millions of dollars are saved almost annually *to the State.*

In this day, the horrors of small-pox, as formerly known, are not generally recognized by the people at large. The saving of deaths from diphtheria to-day is due solely to the physician. The ravages of tuberculosis of a few years ago are constantly being lessened by the urgent teachings of doctors. The annual holocaust from typhoid fever is constantly becoming less and less frightful because of the sanitation teachings of the profession. Endemics and epidemics of yellow fever are scarcely longer to be feared. Cholera infantum, as known a few years ago by its fatalities, is becoming a relatively rare scourge of summers because of the advanced hygienic instructions of family physicians. And thus we might go on mentioning other murderous diseases which have become more and more under the preventive or curative control of scientific medicine.

There is scarcely any means of computing the savings annually of life and loss of time from business occupations by the modern doctor; and the monetary savings to the State by improved healthfulness would easily run up into the *millions of dollars.*

Such savings have been due to doctors—practically at their own expense of time and money spent in study and investigations; and yet what return have the State, cities, and counties given for such results? *Practically nothing.* Against his own pecuniary interests, the life work of the doctor is spent, in great part, in the study of means to *prevent* disease, on the occurrence of which his daily practice depends, and from which he might expect to make an income commensurate with his services to patrons. But he rises above purely sordid motives, and vies with his brother doctor to see how much of lasting good he can do to humanity by study and research, and the popularization of discovered means of preventing diseases. The profession he thus represents rises in importance above that of the money-maker, and should be placed in the category of the scientific investigator and teacher, who are not taxable for their work in but few other States or countries than in Virginia.

Such a condition of affairs cannot be due to any other cause than that the average legislator is not cognizant of what the profession of scientific medicine is really doing to save health and lives of citizens, and thus annually saving unknown sums of money to the State in the way of taxable values.

Now that the Legislators for Virginia have been elected for the General Assembly of 1910, we earnestly appeal to the doctors in every city, town and county of the State to devote as much of their time as they can spare to the proper education of Legislators-elect, so as to have the law which so unjustly imposes a license tax on practitioners of medicine removed from the statute books.

Another duty of the profession is to lend earnest help to the State and local boards of health in their efforts to secure laws which will even better serve their true purposes. Every doctor should be willing to furnish proper statistics to the health boards, and join with such authorities in insisting upon quarantines when needed, and in enforcing health saving laws in the respective communities.

State License Taxes on Doctors.

It is strange that it has taken so many years of concerted effort to educate the Virginia Legislator as to the rightful claims of the medical profession for repeal of State *special* license taxes on practitioners—especially when so many other States have long before recognized the injustice and repealed laws that assessed doctors for such license taxes. Under the untiring leadership of Dr. J. B. DeShazo, of Ridgeway, as chairman of the former Legislative Committee of the Medical Society of Virginia, there was marked annual progress in the education of Legislators, and two years ago almost succeeded in securing the end in view. The present Legislative Committee, Dr. George A. Stover, South Boston, chairman, took up the work accomplished by the former committee, and has pushed the measure during the past year until now it seems a safe prediction that it will be successful during the coming Legis-

lature—if local, county and district medical societies and individual members of the profession throughout Virginia will continue for a short time longer the work of education of their respective Legislators.

Army Medical Corps Examinations.

The Surgeon General of the Army announces that the first of the preliminary examinations for appointment of first lieutenants in the Army Medical Corps for 1910 will be held January 17, 1910, at various points throughout the country. In the selection of these places, due consideration will be given to localities from which applications are received, in order, as far as possible, to lessen traveling expenses of applicants. Applications in complete form must be in possession of the Adjutant General by January 3, 1910, at latest. There are at present eighty-one vacancies in the Medical Corps of the Army.

The Medical and Surgical Society of Northern Virginia and the District of Columbia

Met in Washington, D. C., November 17, 1909, Dr. Stephen Harnsberger, of Catlett, Va., presiding. In addition to the subjects for general discussion—obstetrics and typhoid fever—many interesting and able papers were presented and freely discussed. A recess was taken during the session, at which time the visiting doctors were tendered luncheon by the Washington members. This was voted the most interesting meeting in the history of the society, both scientifically and socially. The next meeting will be held at Manassas, Va., May 18, 1910.

Dr. Truman A. Parker,

Of Richmond, Va., has been selected as Executive Secretary of the recently organized Virginia Anti-Tuberculosis Association. This would seem a most fortunate appointment, as Dr. Parker is unusually well-fitted to enter upon these duties, having been for a time superintendent of the Catawba Sanatorium. We congratulate the Association upon its selection of such an enthusiastic, energetic worker, and one so well-informed along the lines of anti-tubercular work.

A most interesting feature of the Secretary's work at this time is the distribution of Red Cross Christmas stamps, which will be sold until after the holidays. The proceeds will be used for pushing the fight against the white plague in this State and throughout the country.

Dr. A. P. Upshur,

After taking a post-graduate course in New York City, has returned to Richmond, Va., and taken up practice with his father, Dr. J. N. Upshur, at 210 West Grace Street.

Dr. Tom A. Williams,

Of Washington, D. C., while in Europe during the summer, was elected an associate member of the "Société de Medicina Mentale Clinique," of Paris. Dr. Williams has returned to Washington and resumed his practice at 1758 K street.

For Sale—Excellent country location and property near city. Unsurpassed educational advantages, territory unopposed, fees and collections good. Going to city. Address "For Sale," care *Virginia Medical Semi-Monthly,* Richmond, Va.

Wanted—To dispose of a good location. Can give immediate possession. Address "C.," care *Virginia Medical Semi-Monthly,* Richmond, Va.

Obituary Record.

Dr. Richard Watson Fry,

For many years a leading physician of Roanoke, Va., died November 22, 1909, following an operation several days ago. He was fifty-nine years of age, and is survived by his widow. His remains were interred in Richmond, of which city he was a native.

Dr. Fry graduated in medicine from the University of Virginia in 1872, and for a number of years practiced at Coyner's Springs. Later he moved to Roanoke, where he was associated for quite a while with Dr. Joseph A. Gale. He was prominent among both the Elks and Pythians, and held high offices in each order. He joined the Medical Society of Virginia in 1885, and attended several of its meetings.

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Original Communications.

WHAT THE PRACTICING PHYSICIAN CAN DO IN THE PREVENTION OF TYPHOID FEVER.*

By L. L. LUMSDEN, M. D., Washington, D. C.
Passed Assistant Surgeon, U. S. Public Health and Marine Hospital Service, etc.

"There are men and classes of men that stand above the common herd: the soldier, the sailor, and the shepherd not infrequently; the artist rarely; more rare still, the clergyman; the physician almost as a rule. He is the flower (such as it is) of our civilization; and when that stage of man is done with, and only to be marvelled at in history, he will be thought to have shared as little as any in the defects of the period, and most notably exhibited the virtues of the race." * * *—Robert Louis Stevenson, preface to *Underwood's.*

Of the problems in sanitation confronting us in America to-day, the prevention of typhoid fever stands out clearly as one of the most important. The measures required to prevent the spread of this communicable diseaes are known; the practical difficulties encountered in getting these known measures carried out constitute the real problem.

Typhoid fever presents itself as a distinct clinical entity. This fact, coupled with the widespread pervalence, has attracted much popular interest to the disease. If this interest were always an intelligent one, it would be well. but there are few other diseases about the etiology of which there is in the lay mind more misconception. For much of the popular ignorance in regard to the etiology of typhoid fever the medical profession is responsible. Too often the physician, under the stress of care for his patient, will answer the inquiring layman erroneously or in a way subject to gross misinterpretation. It behooves us as members of a high and honorable profession to embrace every opportunity to convey as clearly as possible to the layman such knowledge as will be useful in the prevention of disease and death.

The principles that apply to the prevention of typhoid fever apply also to the prevention of certain other diseases, such as the dysenteries, the diarrheal diseases of infancy, etc., and thus the importance of typhoid prevention is widened in scope.

Prevalence of Typhoid Fever. There are in the United States comparatively few communities of over 1,000 persons which, during any period of twelve consecutive months, within the past ten years have been entirely free from typhoid fever. The extensive prevalence in our country, as a whole, of this thoroughly preventable disease is beginning to be justly considered a national disgrace.

According to the census report for 1900 the average typhoid fever death rate for the United States was 46.5 per 100,000 inhabitants. This means that in the census year, which may be taken as an average, there were about 500 cases of typhoid fever with over 46 deaths among every 100,000 persons comprising the American nation. The total number of deaths from typhoid fever in the United States recorded in the census year 1900 was 35,379, which places typhoid fever fourth in the mortality list. Apart from the mental and physical suffering caused, this amount of sickness and death as a yearly drain upon the nation's resources is a subject worthy of the most serious consideration.

The scourge of typhoid fever falls especially not upon the old or decrepid, whose evening of life is come, nor upon the infant in arms not yet awakened to the world, but upon the adolescent—the man in the vigor of early manhood, the woman in the glory of early womanhood.

*Read before the fortieth annual session of Medical Society of Virginia, held at Roanoke, October 5-8, 1909.

The American nation justly boasts of its great wealth, its wonderful natural resources and its leadership in adventure and invention; but when we compare our typhoid fever statistics with those of other countries we have cause for grave contemplation.

Thus, the typhoid fever death rate per 100,000 inhabitants for the years 1901-1905 was in Scotland 6.2; in Germany 7.6; in England and Wales 11.2; in Belgium 16.8; in Austria 1901-1904, 19.9; in Hungary 28.3; in Italy 35.2; while the rate in the United States in this same period was about 46 (estimated). Some of these European countries now having relatively low rates formerly had high ones. In Prussia for example, the typhoid death rate has been reduced in the last thirty-five years from over 60 to less than 20 per 100,000 population. Climatically the condition of some of these countries seems to be as favorable to typhoid infection as that of the United States as a whole. Therefore, it seems that their decidedly lower typhoid fever rate must be due to their better enforcement of the sanitary measures needed to prevent typhoid fever.

In the United States, typhoid fever is especially prevalent in the South. According to the figures of the United States Census Report for 1900 the ten States which had the highest typhoid fever death rates (average about 79 per 100,000) are all States located south of the Potomac and east of the Mississippi river. The 22 States which had the lowest rates (average about 24 per 100,000) are all northern or western states. Some of the western States formerly had high typhoid fever death rates—as high or higher than those which some of the worst affected southern States have had in recent years. In Massachusetts, for example, in the decade 1871-1880 the average annual typhoid death rate was 62 per 100,000, while in the period 1901-1905 it was 18.2.

The lowered typhoid death rates in the northern States have followed improvements in the water and milk supplies, the installation of better sewerage systems, and improvements in general sanitary conditions.

Several factors no doubt contribute to the relatively high rate of prevalence of typhoid fever in the South, among which probably the chief are:

(1) Faulty sewage disposal, incident to the relatively large rural population and particularly, as pointed out by the investigations of Stiles,[a] to the relatively large percentage of negroes in the population.

(2) Climate.—The long periods of warm weather, when there are additional agents in the transmission of the infection, such as bees and other insects, greater quantities of uncooked foods and drinks are consumed, and there is probably greater individual susceptibility to the infection.

Considering the number of communities in the South in which polluted water supplies have been used for long periods it is a notable fact that there have been reported in the South no pronounced and extensive epidemics of typhoid fever caused by water-borne infection. It may be that the causative organisms in the relatively warmer river and lake waters of the South do not survive in sufficient numbers to cause pronounced epidemics.

In some communities in the South, as has been shown for some in the North, water may play an important part; but, judging by the limited data obtainable, it seems probable that for the South as a whole the greater part of the infection is not water-borne.

Nature and Source of the Infection.—In recent years, the generally accepted view has been that typhoid fever is an infectious disease caused by a specific micro-organism—the typhoid bacillus. The elements of mystery remaining concern the establishment of individual susceptibility to infection and, in some instances, the mode of transmission of the infection. We have no idea why, in some instances, 50 or more persons will be apparently equally exposed to the infection and only one or two have the disease. We may indulge in interesting speculation as to the chances of typhoid bacilli surviving, multiplying and causing infection when ingested by a number of persons and subjected to the very different conditions (bacterial life, etc.), existing in different alimentary canals.

Susceptibility to typhoid infection offers a promising field for research, and its determination may have an important practical bearing on measures to prevent the disease. Pending whatever discoveries may be made in the future in regard both to susceptibility and to any as yet unknown agents there may be in the trans-

a. Hookworm disease and the negroes. Hampton Leaflets, Sept., 1909.

mission of the infection, we should employ the instruments that we have at hand and which have proven effective.

All the accumulated evidence supports the view that man is the permanent host of the parasitic organisms which cause typhoid fever; and if their multiplication in and their dissemination be the human host could be prevented these organisms would soon perish. An apparently sound belief, based on epidemiological findings, is that "each and every case of typhoid fever comes somehow from some previous case." Therefore, the logical method of prevention is to safeguard against the spread of infection from persons who have the disease.

The Patient's Bedside the Fountain Head of Infection.—The destruction of the infection as it leaves the bodies of infectious persons may be accomplished with but little trouble; but once the infection is allowed to escape from the bedside the modes of dissemination are many and devious, and become very difficult, if not practically impossible, to control. The history of typhoid fever contains a number of instances in which an extensive outbreak has resulted from some of the dejecta from only one patient having gained access to a water supply, milk supply or some other favorable medium.

The outbreak at Plymouth, Pa., in 1885, which has become classic in the literature, was quite definitely established to have been due to the pollution of the water supply with the dejecta from one man ill with typhoid fever. Had the excreta of this one patient been disinfected at the bedside, Plymouth, with a population of 8,000, would have been spared about 1,100 cases and 114 deaths from typhoid fever.

Occasional disasters such as this teach in a startling way a valuable lesson. The number of cases occurring in pronounced and explosive outbreaks, however, compose but a small part of the whole number of cases occurring in the county every year. For the majority, the infection spreads insidiously from home to home, from community to community—hands, water, milk, various food-stuffs, flies, etc., serving as agents of transmission; the primary source of the infection, however, being always the carelessly disposed of excreta of some person.

In the rural sections there may be observed frequent instances like the following:

A community usually free from typhoid fever is visited by some one who, upon arrival or soon thereafter, is ill with typhoid fever. The season is late summer or early fall. The patient is cared for at a private home. The excreta, without disinfection, are thrown out in the field or deposited in an open privy. Flies, chickens, etc., have access to them. The same persons who attend the patient and handle the soiled bedding, etc., prepare the meals for the household. Within three or four weeks another case, or perhaps several cases, develop in the home. About the same time or somewhat later, cases begin to develop in other homes in the neighborhood. Before the outbreak is over 15 or 20 cases may occur. The infection was introduced by the first case, and conditions were favorable for its dissemination. The media of dissemination may have been the well or spring water, the hands of the patient's attendants, flies, etc.—anything in fact which could have conveyed the typhoid germs from the excreta of the patient to the alimentary canals of other persons.

In some such instances some of the infection may be spread from the patient before the physician is called; but if the physician, as soon as he does arrive, has the proper precautions taken the greater part of the infection will be prevented.

The board of officers detailed by the Surgeon-General of the Public Health and Marine Hospital Service to study typhoid fever in the District of Columbia,[b] found in the course of the investigations in 1906, 1907 and 1908 that the use of disinfectants in stools and urine, and the other measures carried out to prevent the spread of infection from the bedside, were efficient for only about one-third of the patients treated at private residences. All the cases investigated had been reported and were attended by physicians. The figures make rather a poor showing, yet probably a better one than would figures similarly obtained from the average community in the United States.

The Attending Physician the First and Logically the Most Important Barrier in Prevention.—As a rule the attending physician is the one who first determines the nature of the illness. Therefore, having the earliest informa-

b. Origin and prevalence of typhoid fever in the District of Columbia. Report No. 1. By M. J. Rosenau, L. L. Lumsden, and Joseph H. Kastle. Hygienic Laboratory bulletin No. 35, 1906.
—Report No. 2, for 1907. Hygienic Laboratory bulletin No. 44.
—Report No. 3, for 1908. Hygienic Laboratory bulletin No. 52.

tion, his is the responsibility to advise the family of the danger and to recommend the adoption of precautionary measures. Ethically his duty is just as clear as that of a man who discovers a fallen railway bridge before a rapidly approaching passenger train. The physician may hold that the duly appointed health officers have the responsibility for the prevention of typhoid fever in the community; likewise the man at the railway bridge may hold that the railway company is responsible for the condition of the track.

The obligation of disease prevention is to the practicing physician self appointed. The results of preventive measures are not immediately apparent and, for that reason, frequently not appreciated by those protected. Therefore, the physician in fulfilling this obligation too often has as his only reward a consciousness of duty done. How valuable to the physician is such a reward is evidenced by the excellent record in disease prevention accomplished by the medical profession since 1796, when Edward Jenner, a country practitioner, gave to the world vaccination.

There is no man to whom the word duty should and does mean more than it does to the true physician. It is a safe prediction that if every practicing physician in Virginia could be convinced that it is his duty to do all he can in the prevention of typhoid fever and his hearty and intelligent co-operation secured in a campaign against this communicable disease the State of Virginia would soon have a typhoid rate so low that it would astonish the world.

What Practicing Physicians Can Do in the Prevention of Typhoid Fever.—1. *Become Informed as to Efficient Methods of Prevention at the Bedside.* This information, if not already possessed, can be obtained by applying to a city, county, state or national health organization. In recent years the methods have been taught in the medical schools of good standing and they may be found in many of the modern textbooks. There is now no reasonable excuse for physicians not knowing them, and state examining boards should see to it that candidates for the practice of medicine do know them.

Teach by Precept and by Example Precautionary Measures at the Bedside.—The attending physician, in his frequent visits to the patient, has a much better opportunity to instruct thoroughly the attendants of the patient than the health officer possibly can have in his one or two official visits to the home for that purpose. Besides, the physician at each of his visits has an opportunity to see how the precautionary measures are being carried out and to correct the methods when need be. The doctor, as a rule, is regarded by the members of a family as a friend and protector. What he tells them will impress them much more than what is told them by the health officer, whose visit to the home in many instances is regarded as a mere formality.

If the doctor had convinced the family that typhoid fever is not "contagious" and that there is no danger of persons "catching" the disease or of having it communicated to them by the sick, the health officer will have much difficulty in making that family believe that the precautionary measures which he advises are other than utter nonsense. After the disease has been "caught" by one or more members of the family some skepticism as to the infallibility of the family physician's opinion may arise in the minds of the household, but it is then too late to profit fully by the intelligence.

To set an example of proper cleanliness in the sick room is very important. If the doctor, after handling the patient, leaves the house without washing his hands and continues on his round of practice the attendants wonder why they should be so careful about their hands when the doctor is so careless about his own.

It is possible that the infection received by the patient from his own carelessly handled dejecta is harmful to the patient. Therefore it appears justified to teach that the precautionary measures are for the good, not only of the well, but also of the sick. As a rule the family will do readily all that is suggested for the good of the well.

There is nothing more beautiful in human nature than consideration for the sick and afflicted. At one time last summer in a town of about 1,500 population in Virginia there were ten or twelve cases of typhoid fever under treatment. At the street corners above and below the homes of several of the patients ropes were stretched across the streets to prevent vehicles from passing along and disturbing the patients. The citizens generally viewed this splendid consideration for the sick as a matter

of course, which made it all the more impressive. On inquiry, however, it was learned that the precautions being taken to prevent the spread of infection from some of the patients were decidedly inadequate. Other cases occurred. More rope was stretched, some of which later on was lowered to admit the hearse. How much better it would have been to have roped in the infection at the bedside of the first patient and so have had lines drawn for the benefit of the sick and the protection of the well!

(3) *Have Preventive Measures Begun Immediately in all Suspected Cases.*—In many cases of typhoid fever a positive diagnosis cannot be made from the symptoms alone until after the second week of illness or later. In some caess, especially in children, running a mild or an irregular course, the most skilled clinician may not be able to make a perfectly positive diagnosis, even after having had the cases under observation throughout the attack.

The results of recent investigations[c] indicate that infection is often discharged from typhoid fever patients from the very beginning of the illness. Therefore, it is all important to begin preventive measures early, which usually can not be done if the establishment of a positive diagnosis is waited for. Early precaution in one or two suspected cases may prevent an epidemic.

(4) *Advise and Have Carried Out Methods of Prevention Which Are Practicable.*—It is poor judgment to advise a poverty stricken family to use expensive disinfectants. Fortunately some of the best chemical disinfectants, such as the soluble preparations of crude carbolic acid (Creolin), etc., are also among the cheapest. On some occasions chemical disinfectants are not immediately obtainable. Though it is much easier to carry out the precautions when these agents are at hand a fairly complete safeguard may be secured by the intelligent use of the agents available in practically every home. Water while boiling to disinfect the stools and urine, the bedding, dishes, spoons, etc., thorough scrubbing with soap and hot water the hands of the attendants and reasonable isolation of the patient and his attendants—these things may be done in every instance.

(5) *Continue Preventive Measures as Long as the Dejecta Are Infective.*—The majority of typhoid convalescents, by the time they are able to walk around, no longer discharge typhoid bacilli in their dejecta. Some persons, however, apparently entirely recovered from the attack of fever, continue to pass typhoid bacilli in the urine or feces, or in both, for months or even years. It is estimated from the results of rather extensive bacteriological examinations that about 3 per cent. of persons who have had typhoid fever become chronic bacillus-carriers.[d] A good rule to follow on general principles is to continue the use of disinfectants for at least two weeks after defervescence. In cases of relapse the same precautions, of course, should be taken as in the original attack.

Whenever practicable to do so, bacteriological examinations of the dejecta should be made and the patient not discharged until at least two such examinations have given negative results for the typhoid bacillus. This should become a requirement for all cases treated in hospitals, cities and other places where laboratory facilities are available.

All typhoid convalescents should be given urotropin 10 grains three times a day for about ten days before being discharged. This is particularly important if any cloudiness of the urine is observed. Cloudiness of the urine in a typhoid convalescent should be taken invariably to mean, unless the contrary is demonstrated by laboratory test, that the urine is teeming with typhoid bacilli, often in practically pure culture. Treatment with urotropin will usually free the urine from typhoid bacilli quite promptly. It seems probable that a carrier with typhoid bacilli in the urine would be ordinarily a greater menace to the public health than would be one with the bacilli in the alvine discharges. For the cure of the latter so far no very successful treatment has been discovered.

(6) *Teach the Importance of Proper Disposal of Sewage.*—Typhoid infection may be disseminated in the dejecta of persons who are in the early stages of the disease and before they have taken to bed, by cases which remain ambulant throughout the attack, by convalescents (acute bacillus carriers), and by persons who, though apparently in good health, are either temporary or chronic bacillus carriers.

c. Conradi, H.: Deut. Med. Woch., Vol. 33, No. 41, October 10, 1907.

d. Lentz. Hyg. Rundschau, Vol. 16, 1906, p. 1068. Klinger. Arb. a. d. k. Gesundsh., Vol. 24, 1906, p. 91. Von Drigalski, Deut. Viertelj. f. off. Gesundheitspflege, Vol. 38, 1906, p. 19.

In order to safeguard the family and the community against these sources of infection it is necessary to have the sewage of all persons—the sick and the well—properly disposed of. The report of the U. S. Army Commission[e] on the prevalence of typhoid fever in the national encampment during the Spanish-American war of 1898, if read with understanding, is throughout a most eloquent appeal for proper sewage disposal in rural sections. Among 107,973 men in our national encampments there were 20,738 cases of typhoid fever with 1,580 deaths. In 90 per cent. of the volunteer regiments typhoid fever broke out within eight weeks after camp was occupied. Intelligent disposal of sewage in the encampments almost beyond a reasonable doubt would have prevented at least 75 per cent. of this occurrence of sickness and death.

The lack of privies and the use of faulty privies in a community constitutes a grave menace to public health. The problem of soil pollution in the Southern States has been clearly indicated by the results of Stiles' investigations.[f] Infection from careless disposal of excreta may be carried by drainage or seepage, or on the feet of chickens, hogs, dogs, cats, etc., to the local water supply. It may be conveyed by flies and other insects and by fingers directly to the foods in the kitchen. The following cuts, designed by Dr. Stiles, tell the story graphically:

Fig. 1. An unsanitary privy, found too frequently on our farms. Notice how the animals are spreading soil pollution.

Fig. 2. Average rural privy. It is known as a surface privy, open in back. Notice how the soil pollution is being spread and how flies can carry the filth to the house and thus infect the food.

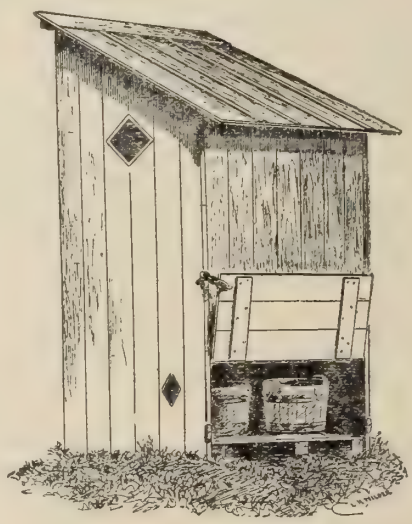

Fig. 3. A sanitary privy, designed to prevent soil pollution. Galvanized pails may be used instead of tubs. The door should be kept closed. The ventilators should be wire screened to keep out flies. The seats should be provided with hinged lids.

The scattering of excreta along railway lines from the very faulty sanitary arrangements on passenger coaches, as pointed out by Barringer,[g] constitutes an entirely unnecessary danger which readily could and should be corrected by legislative enactment.

In communities unprovided with water carriage sewerage systems, physicians should emphasize, at every opportunity, the great importance of the building and the use of sanitary

e. Report on the origin and spread of typhoid fever in U. S. military camps during the Spanish war of 1898. By Walter Reed, Victor C. Vaughan and Edward O. Shakespeare, 2 Vols., Washington, 1904.

f. The importance of preventing soil pollution. So. Carolina State Board of Health, 1909.

g. Barringer, P. P. An unappreciated source of typhoid infection. Med. Rec., Vol. 64, 1903, p. 971-974.

privies. Every physician in such a community should have a properly constructed and managed privy at his own home. What the doctor does to protect his own family will frequently impress the neighbors more than what he tells them to do.

(7) *Give Consistent Advice in Regard to Polluted Water Supplies, Milk, and Food Supplies Generally.*—What the physicians in a community tell the people about the water supply, the milk supply, etc., as possible sources of infection, frequently will have much more effect than the proclamations of the health officer.

When doctors disagree the lay mind is left in doubt. If Dr. A tells a mother that it is advisable to pasteurize the market milk before feeding it to her children, and Dr. B. tells her that pasteurized milk is injurious to the health, the mother may not be able to discriminate, or she may conclude, quite naturally, that the doctors do not know much about milk anyhow.

It is highly important for physicians to have as nearly as possible a concensus of opinion about local sanitation, so that consistent advice may be given. Therefore,

(8) *Make the Local Medical Society a School of Instruction in the Principles of Prevention, as well as the Cure, of Disease.*—Here the local problems of sanitation can be considered from the different standpoints of the different physicians. A committee on disease prevention should be appointed to present before the meetings for discussion and resolution the problems at hand.

(9) *Co-operate With Health Officers.*—As is already done in some communities it seems advisable that the members of the local medical profession should have something to do with the appointment of the local health officer. In some instances the antagonism of physicians to their health officer is due partly to the fact that they regard him as an outsider not familiar with their local problems. But if the health officer has been appointed by, or on the recommendation of, the members of the local medical profession the physicians naturally will be more inclined to support him in his work. Without home support from the members of the medical profession the health officer, as a rule, can accomplish little.

In the prevention of typhoid fever it is very important to the health officer for physicians to report their cases promptly. By making careful clinical observations and by the employment of such laboratory facilities as are available, the attending physician can do much to establish early and accurate diagnosis.

The political leaders frequently will be glad to shift to the physicians the responsibility of appointing the health officer.

(10) *Help to Create Sentiment for Proper Sanitation and so Aid in the Procurement of Desirable Legislation.*—In a republican form of government, such as ours, law can successfully enact only the strong convictions of a strong majority. Whatever advances in sanitation are made by legal requirements must be such as the people wish and demand of their representatives in the legislative bodies. The practicing physician is one of the greatest factors in the molding of public opinion in regard to cause and prevention of disease.

Such are the opportunities of the practicing physician in the prevention of typhoid fever.

Gradually through various agencies—the schoolroom, the newspaper, the popular magazine, the health office bulletin, etc.—the sanitary intelligence of the people generally is being awakened. As a result, there is being demanded from year to year greater efficiency in disease prevention.

Of the widely prevalent infectious diseases none promises better results from equivalent amounts of intelligent effort at prevention than does typhoid fever. Our city, county and state health organizations generally are becoming more active in the enforcement of measures to prevent this disease. The U. S. Public Health and Marine-Hospital service is conducting in the District of Columbia an exhaustive investigation of the complex problem of urban typhoid fever. Officers of this service have been given, for the last three years at the Hygienic Laboratory, special training in the bacteriology and the epidemiology of typhoid fever.

As the work of the health authorities to prevent typhoid increases a greater demand will be made upon practicing physicians for assistance. The history of the medical profession warrants the prediction that this demand shall not be made in vain; and, as in the alleviation, so in the prevention of human suffering, at the call of the master-word DUTY the practicing physician will make good.

SOME OBSERVATIONS ON THE USE OF TUBERCULIN IN PULMONARY TUBERCULOSIS.*

By W. T. LITTLE, M. D., Canon City, Col.

Specific therapy for tuberculosis remains in the experimental stage. Cattle have been immunized against tuberculosis by inoculating the live bacillus but the immunity thus conferred is of short duration, lasting not more than "six months to two years" (Baldwin), and exposure to natural infection after this may result disastrously.

From the production of a prophylactic immunity, which thus far seems to offer little of practical value, we shall consider the possibility of the production of a curative immunity after natural infection has taken place.

Although much remains obscure we do know that two factors are concerned in the production of the disease—the bacilli and their toxins. We know that man's resistance is relatively high to the bacilli and low to the toxins; that the defensive bodies—agglutinin, opsonin and lysin —are more concerned with the destruction of the bacilli leaving the antitoxic bodies to overcome the toxins.

Believing the antibodies rose and fell in the blood together, Koch thought the agglutinin, whose quality could be more or less accurately determined, would prove an index of resistance as he found, when he injected an emulsion of tubercle bacilli into the man, the reactions were accompanied with a distinct rise in the agglutinating index. Further observations proved this incorrect. Kinghorn and Twitchell found the serum of healthy individuals agglutinized tubercle bacilli almost as frequently as did the serum of patients suffering from pulmonary tuberculosis (84.28 per cent. for healthy, and 87.09 per cent for tuberculous persons), and that the agglutinating value of these healthy and tuberculous subjects was practically the same (13.67 for healthy, and 14.82 for tuberculous).

These findings agree with other observers—Koch, Beck, Rosenberg and others.

They further observed, as did also Koch, that while this agglutinating value increased under the administration of tuberculin, it did not reach its maximum at the end of treatment often falling unexpectedly in the course of the tuberculin treatment in spite of the fact that the patient continued to improve.

Nor is the opsonic index any more dependable. It rises and falls as does the agglutinating index. Further, we lack evidence to prove the leucocytes do more than temporarily remove the bacteria from the field of action; or if they do digest the bacilli the toxins are doubtless liberated into the circulation.

Baldwin found "when natural infection is taking place or the individual is undergoing immunization there are evidences of changes in the blood, but when no such stimulus is active the content of anti-bodies agglutinin, opsonin or lysin slowly drops to a normal level. That the anti-toxic bodies are equally unstable and rise and fall co-ordinately with the other anti-bodies seems reasonable and explains the comparatively short duration of tubercular immunization. But this condition, unstable as it is, is necessary for the recovery of an individual sick with tuberculosis; and the production of this temporary immunity is the aim of all treatment.

As efforts for the production of a passive immunity have thus far proved disappointing, and we are forced to depend upon the patient's own tissue cells to produce the anti-bodies, it is of the greatest importance that these are reinforced to the utmost by food and rest. Accordingly the hygienic-dietetic treatment must continue to be of paramount importance, and in a majority of cases will prove sufficient. But there remains a goodly proportion who have acquired sufficient immunity to hold the disease in check but not enough to completely arrest it. Their tissue cells have enough vitality to respond to fresh stimuli but these are too slight to provoke an increased production of anti-bodies.

It is just here that tuberculin is indicated, when it acts as a spur to the tissue cells compelling them to **greater activity.**

Choice of Tuberculin. There is still a division of opinion on the relative efficacy of tuberculins containing the bacilli (T. R. and B. E.) and the filtrates and latterly that made with the bovine variety of bacillus. The toxins of the tubercle bacillus being largely insoluble are not given off, it is asserted to the medium in which it grows.

The evident presence of toxins in the filtrates however, is explained by Vaughn as being due to the presence of splitter-products of the bac-

*Read at the annual meeting of the Colorado State Medical Society, Estes Park, Col., September 14-16, 1909.

illus; in other words fragments of the bacillus which liberate their antitoxins after injection. Be that as it may, I believe the weight of evidence is in favor of the filtrates as being easier controlled, safer, and just as potent therapeutically.

Selection of Patients. I have indicated elsewhere the class of patients for whom the tuberculin treatment is appropriate. Nevertheless their selection requires no little experience and judgement. Patients showing signs of activity should be excluded and also the far advanced. Our greatest temptation comes from the latter class who have all but exhausted our resources and are finally given tuberculin because they are afebrile and appear to have a fighting chance. Occasionally, we may get some benefit but disappaointment will be the rule.

Method of Administration and Dosage. The so-called clinical method of administration, as elaborated by Dr. Trudeau, is in the main pretty generally accepted, I believe, even by those who are competent to take the opsonic index. This method depends entirely on the clinical signs as the guide for dosage and intervals. For a complete description of this method I refer you to Dr. Trudeau's original article. I do not follow his method, however, to the extent of pushing tuberculin to the maximum of tolerance, or aim to produce tuberculin immunity. Once the dose is reached under which the patient shows improvement, there seems little need of further increase until we see greater stimulation than we are producing is necessary. This is virtually Wright's method without the opsonic index.

Reactions. Reactions from tuberculin are advised against by all who have written on the subject, although Trudeau and Brown admit they have never seen harm come from them. Theoretically a reaction if not too severe should be beneficial in producing an increase of the antibodies, and Koch found in his study of the tubercle agglutinin that he got a decided rise of the index only after he had produced a sharp reaction with tuberculin. Clinically we observe the period of improvement that follows an exacerbation of the disease. I am disposed therefore to look on slight reactions as in no sense undesirable and entirely harmless if we observe a sufficient interval after the reaction before resuming treatment.

The duration of treatment depends entirely on the condition of the patient. So long as there is improvement, treatment should be continued until there is an apparent cure or improvement ceases. In relapse it is often desirable to give a second course of injections.

The real value of tuberculin is difficult to estimate and impossible to express as so many factors enter into the cure of tuberculosis. But the same may be said of climate. Nevertheless I am convinced that patients do better with it together with the hygienic-dietetic treatment than when the latter is depended on alone.

It has been asserted that what apparent benefit comes from tuberculin treatment is psychic. I cannot admit this, and yet we all recognize the wonderful stimulus it is to patients to know something is being done for them. In addition, it enables one to observe his patients with that frequency and regularity otherwise impossible outside of a sanitorium.

Important as this advantage is, the physician who gives tuberculin merely to avail himself of it without an honest belief in its therapeutic potency will fail because he will not acquaint himself with the minutiæ of detail essential to success.

What the future has in store for us is impossible to forecast, but until better means are discovered it is our duty to make use of all the weapons at our command, however imperfect they may be.

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A SERIES OF FOUR HUNDRED CONSECUTIVE ABDOMINAL OPERATIONS.*

By CHARLES R. ROBINS, M. D., Richmond, Va.

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A review of my last four hundred abdominal operations as shown in the accompanying table gives the following figures:

	No.	Deaths
Operations primarily for tubal inflammation, acute and chronic	82	2
Extirpation of ovarian tumors including two with twisted pedicle	14	

*Read before the fortieth annual session of the Medical Society of Virginia, held at Roanoke, October 5-8, 1909.

	No.	Deaths
Webster-Baldy operation for retrodisplacement	33	
Ventro suspension for retrodisplacement	14	
Internal Alexander for retrodisplacement	1	
Myomectomy	2	
Operations for ruptured ectopic pregnancy	7	
Operations for unruptured ectopic pregnancy	2	
Supravaginal hysterectomy for fibroids and other conditions	30	
Total hysterectomy for various conditions	10	2
Porro operation	1	
Abdominal drainage for ruptured pyosalpinx	1	1
Operations for appendicitis in acute stage	50	4
Operations primarily for chronic and subacute appendicitis	70	
Bassini operation for inguinal hernia	13	
Bassini operation for strangulated inguinal hernia	4	1
Mayo operation for umbilical hernia	1	
Repair of ventral hernia	2	
Suprapubic cystotomy for retention of urine	6	1
Transperitoneal cystotomy for polypus of bladder	1	
Gastrostomy	2	1
Operations on gall bladder	8	
Laparotomy for tubercular peritonitis	10	
Laparotomy for release of adhesions	1	
Nephrolithotomy	1	
Operations for undescended abdominal testicle	1	
Posterior gastro enterostomy	1	
Fixation sigmoid for volvulus	1	
Intestinal anastomosis, repair or resection for various conditions	10	5
Drainage of abdomen in gunshot wound	1	
Removal of cyst of omentum	1	
Laparotomy for stab and gunshot wound of abdomen with profuse hemorrhage	2	1
Median incision and release for strangulated femoral hernia	1	1
Incision and drainage for various abscess of abdominal origin	7	1
Exploratory operation for various inoperable conditions	9	3
	400	23

For purposes of brevity, this summary takes into consideration only the principal motive for operation and does not represent the entire amount of work done. Opportunity was taken while the patient was anesthetized to perform other necessary operations, or the clinical picture was complex and required multiple operations. A study of the appended table will show that there were five hundred and seventy-nine separate abdominal operations performed in the four hundred cases enumerated as follows:

Myomectomy, 14; Supravaginal hysterectomy, 30; total hysterectomy, 10; colpo-hysterectomy, 1; porro operation, 1; partial extirpation uterine adnexa for inflammation, 82; complete extirpation uterine adnexa for inflammation, 2; abdominal and vaginal incision for drainage, 6; Webster-Baldy operation, 33; internal Alexander, 1; ventro suspension in operation for pelvic inflammation, 48; Ventro suspension for retrodisplacement, 14; ventro suspension for prolapse, 6; suspension of ovary, 1; extirpation of ovarian cysts, 14; extirpation ruptured ectopic pregnancy, 7; extirpation unruptured ectopic pregnancy, 2; extirpation fibroma of round ligament, 1; normal appendectomy in course of another operation, 23; appendectomy for inflammation, acute and chronic, 183; Drainage appendicular abscess, 9; cholecystotomy and partial excision, 1; cholecystotomy and drainage, 7; suprapubic cystotomy, 6; transperitoneal cystotomy, 1; Bassini operation, 19; entertostomy, 1; median incision for reduction strangulated hernia, 1; Mayo operation for umbilical hernia, 1; repair ventral hernia, 4; nephropexy, 4; nephrolithotomy, 1; extirpation cyst or omentum, 1; laparotomy for tubercular peritonitis, 9; laparotomy for release of adhesions, 1; gastrostomy, 2; posterior gastro enterostomy, 1; resection small intestine and enterostomy, 2; resection coecum and portion of ileum, 1; resection of colon, 1; anastomosis of small intestine, 1; repair of gunshot wound of intestines, 2; repair of colon for fecal fistula, 2; laparotomy for stab and gunshot wound of abdomen causing profuse hemorrhage, 2; drainage of gunshot wounf of abdomen, 1; fixation of sigmoid for volvulus, 1; operation for undescended abdominal testicle, 2; incision and drainage of abdominal abscess of various origins, 7; exploratory laparotomy, 9. Total 579.

One of the questions coming up frequently in complex cases is the advisability of undertaking to correct all pathological conditions present at one operation. My rule has been to complete all operative work at one sitting, unless there are strong reasons to the contrary, for various reasons. In the first place after a patient has once been operated upon he shrinks from having to undergo a similar ordeal again, and often refuses. The work and results are therefore incomplete and unsatisfactory. The shock of two operations is, I believe, greater than one operation reasonably prolonged, and I believe the risk is also much greater in the end. In none of the cases in this series was there a death as a result of multiple operations.

As my experience increases I am more and more convinced of the necessity of making very complete examinations in all cases coming for operation and frequently find conditions not at all related to the disease for which relief is sought which are of equal or more importance. By overlooking and failing to correct all of the factors entering into a given case, we have an incomplete or negative result. The question of mortality is always one of interest. In the 400 cases there were 23 deaths. We can frequently, by selecting a series of cases which are running smoothly, get very remarkable results.

There must be, however, in all cases an inevitable mortality. If this were not so, death could be deferred for an unlimited period by submitting to a surgical operation whenever we observed its approach. In other words there is an inevitable mortality rate, but we can and must make it approach the minimum.

On the other hand we cannot afford to assume any risk that gives the patient a chance in a hopeless condition, for the sake of making a record. In order to be fair I have included every death which occurred as a result of operation even if patient had passed from under my care.

In 82 operations for tubal inflammation, acute and chronic, there were two deaths, which occurred very near each other. If a series had been run back previous to the first one of these deaths it could have been made over one hundred operations without a death. One of the cases developed a septic pyosalpinx which was treated for some time but patient's condition and temperature continued to grow worse. Drainage without entering the abdominal cavity could not be accomplished. Patient died on third day. In the second case a supravaginal hysterectomy was done. The adhesions were very dense and a considerable amount of raw surface was exposed in removal. The patient died on seventh day after operation of peritonitis. In ten cases of total hysterectomy there were two deaths, one from hemorrhage, as a result of rupture of uterus into the venons plexus of the broad ligament during a forcible delivery, which the operation was unable to control before patient became exsanguinated. In the second case the ureter was unconsciously wounded in doing a radical operation for cancer of cervix. There was some infiltration of urine in the pelvic tissues which was drained and patient sent home in very good condition. She, however, died some months after from symptoms which were apparently due to a pyonephrosis.

There was one case of ruptured pyosalpinx which died. The patient had been suffering for some time from pyosalpinx which suddenly ruptured. An abdominal incision was made under cocaine for drainage in a forlorn hope, but patient died in a few hours. I had saved one patient under similar conditions some time before and felt that the treatment was worth trying.

In fifty operations for appendicitis in acute stage there were four deaths. One died from anesthetic. One died from general peritonitis, which had fully developed previous to operation. There was a perforated appendix and the patient had been violently purged by her parents before sending for a doctor. At the time of operation on the 6th day the intestines were dry and glistening, and between the coils were minute foci of pus which seemed to be uniformly distributed. There was no abscess about the appendix which was ruptured. There was no change in patient after operation, and she gradually grew worse and died two days later.

One died from appendiceal abscess, which was situated toward median line and covered over in every direction by intestine. It contained about a quart of very foul pus and gas. Incision and drainage were practiced but owing to the difficulties of the case the general cavity became infected, notwithstanding that every effort was made to protect it, and patient died of peritonitis.

In the fourth case patient had a ruptured appendix and was operated on in a few hours after attack, and made apparently a good recovery, but two weeks later developed a temperature which proved to be due to multiple abscess of liver. This was incised and drained but she finally died 32 days after the first operation.

In four cases of strangulated hernia there was one death. This operation was performed under cocaine on account of advanced age and feeble condition of patient, but he died of uremia which had developed previous to operation, in about ten hours.

In six cases of supra-pubic drainage for retention of urine there was one death from uremia in an old man with arterio sclerosis and well developed uremic symptoms previous to operation. The operation was performed under cocaine.

In two operations for gastrostomy there was one death. In this case there was a foreign body in the œsophagus which could not be dislodged, and the operation was performed in order to nourish the patient. He died, however, from toxemia resulting from the presence of the foreign body.

In ten operations on the intestine there were five deaths.

In one case resection of bowel with enterostomy for gangrenous strangulated inguinal

hernia was relieved of symptoms but died two weeks later of uremia, a condition present previous to operation.

One case had a rupture of intestine and stripping of six feet from mesentery as a result of railroad accident. Enterostomy and drainage were performed as the quickest procedure, but patient died in half hour after operation.

One case died in twenty-four hours after resection of bowel for intussusception at ileocecal valve with gangrene of intestine.

One case of volvulus of sigmoid of one week's duration with gangrene of intestine in woman over eighty years of age, died three days after resection.

One case of gunshot wound died of peritonitis.

In one operation of gunshot wound of liver with profuse hemorrhage patient died in one hour after operation as result of hemorrhage.

In one operation for strangulated femoral hernia, patient died of air embolus.

In seven operations for abdominal abscess one patient died from inoperable malignant adenoma of intestine, which caused abscess.

In nine exploratory operations, three patients died in hospital from inoperable conditions.

In reviewing the deaths it will be seen that of the twenty-three cases, twelve either died of co-existing diseases which were present prior to operation and in which the operation in no way influenced the termination, or from malignant or other inoperable conditions which continued to exist and caused the death of patient, uninfluenced by the operation, and moribund and hopeless cases in which operation could have been refused. This would leave eleven deaths, a mortality of 2 3-4 per cent.

Table Showing Number of Patients Operated and Operations Performed on Each.

	Cases	Deaths
Removal of one ovary for chronic inflammation with normal appendectomy	1	
Removal one tube for pyosalpinx, (septic)	2	
Removal one tube and ovary for pyosalpinx (chronic)	1	
Removal one tube and ovary with drainage of pyosalpinx	1	
Removal one tube and ovary and appendix for chronic salpingitis and chronic appendicitis	2	
Removal one tube and ventro suspension for chronic salpingitis	1	
Removal one tube and ovary and ventro suspension for tubo ovarian abscess	1	
Removal one tube and ovary, appendectomy and ventro suspension for abscess of ovary and chronic appendicitis	1	
Removal one tube and one ovary, appendectomy and ventro suspension for chronic salpingitis, cyst of ovary and chronic appendicitis	1	
Removal both tubes and ovaries, appendectomy, ventro suspension for double chronic salpingitis and chronic appendicitis	2	
Removal both tubes, resection ovaries, appendectomy, ventro suspension for double salpingitis and chronic appendicitis	19	
Removal both tubes, ventro suspension, normal appendectomy for double salpingitis	4	
Removal both tubes, ventro suspension, appendectomy, for double salpingitis with retrodisplacement and chronic appendicitis	6	
Removal both tubes and normal appendectomy for double salpingitis	4	
Removal both tubes and ventro suspension for double salpingitis	8	
Removal both tubes, ventro suspension, normal appendectomy for double salpingitis and retrodisplacement	2	
Removal both tubes and appendectomy for double salpingitis and chronic appendicitis	3	
Removal both tubes and resection of ovaries for chronic salpingitis	8	
Removal both tubes and ventro suspension for double salpingitis	3	
Removal both tubes, ventro suspension for tubercular salpingitis	1	
Removal both tubes and ventro suspension for double salpingitis and retrodisplacement	1	
Removal both tubes, appendectomy, myomectomy, for double salpingitis, chronic appendicitis and subserous fibroid	3	
Vaginal and abdominal drainage for large pyosalpinx	1	
Exploratory laparotomy and vaginal drainage for encysted peritonitis	1	
Appendectomy for acute appendicitis	18	1
Appendectomy for gangrenous appendicitis	5	
Appendectomy and drainage ruptured appendix	11	1
Appendectomy and drainage liver abscess for ruptured appendix followed by abscess of liver	1	1
Appendectomy and drainage for gangrenous appendicitis and diverticulitis	1	
Appendectomy and drainage for persisting symptoms following drainage of abscess	1	
Appendectomy and drainage for acute appendicitis	4	
Incision and drainage without removal of appendix for appendicular abscess	7	1
Incision and drainage multiple abscesses without removal of appendix for diffuse peritonitis	1	
Incision and drainage for ruptured appendicular abscesses	1	
Appendectomy for subacute appendicitis	8	

	Cases	Deaths
Appendectomy and drainage for chronic appendicitis	2	
Appendectomy for chronic appendicitis	49	
Appendectomy and Bassini for chronic appendicitis and hernia	2	
Appendectomy and removal right tube and ovary for subacute appendicitis adherent to right tube and ovary	1	
Appendectomy with excision of scar tissue for sinus following drainage of appendicular abscess	1	
Appendectomy and myomectomy for chronic appendicitis and subserous fibroid	2	
Appendectomy and release of pelvic adhesions for chronic appendicitis	1	
Appendectomy and partial removal of uterine adnexa for chronic appendicitis and chronic salpingitis	2	
Appendectomy and nephropexy for chronic appendicitis and movable kidney	2	
Removal both ovaries, appendectomy for double papillary cysts and chronic appendicitis	1	
Removal both ovaries for double proliferating cysts	1	
Removal one ovary and exsection both tubes, ventro suspension for cyst of left ovary and double chronic salpingitis	1	
Removal one ovary and tpbe and resection of one ovary, normal appendectomy for cysts of both ovaries	1	
Removal one ovary and resection of one, appendectomy, ventro suspension, for cysts of both ovaries and chronic appendicitis	1	
Removal both ovaries and one tube, appendectomy and myomectomy, for cyst and twisted pedicle and cyst of other ovary, chronic appendicitis and subperitoneal fibroid	1	
Removal one ovary and tube, appendectomy, ventro suspension, for cyst of ovary with twisted pedicle, chronic appendicitis	1	
Removal of one ovary and resection of one, appendectomy, myomectomy, for hemorrhagic cyst of one ovary and follicular cyst of one, chronic appendicitis, subserous fibroid	1	
Removal of one ovary and tube for cyst	1	
Removal of ovary and tube for intraligamentary cyst	1	
Removal of intraligamentary cyst and tube on one side and tube and ovary on one side, for irtraligamentary cyst, tubo ovarian abscess and subserous fibroid	1	
Removal cyst, both tubes, ventro suspension, normal appendectomy, for parovarian cyst, double chronic salpingitis	1	
Removal ovarian cyst and myomectomy	1	
Removal one ovary and tube and appendectomy for cyst of ovary and chronic appendicitis	1	
Webster-Baldy and appendectomy for retrodisplacement and chronic appendicitis	19	
Webster-Baldy and normal appendectomy for retrodisplacement	4	
Webster-Baldy for retrodisplacement	3	
Webster-Baldy, appendectomy and salpingectomy for retrodisplacement, chronic salpingitis and appendicitis	2	
Webster-Baldy, appendectomy and suspension of ovary for retrodisplacement, chronic appendicitis and prolapse of ovary	2	
Webster-Baldy and nephropexy for retrodisplacement and movable kidney	2	
Webster-Baldy, double salpingectomy, myomectomy for retrodisplacement, double salpingitis, subserous fibroid	1	
Myomectomy	1	
Removal of fibroma of round ligament and appendix	1	
Removal tube and ovary and appendix for ruptured ectopic pregnancy and chronic appendicitis	4	
Removal tube and ovary for ruptured ectopic	2	
Removal tube and ovary for unruptured ectopic	1	
Removal tube and ovary, myomectomy, appendectomy, for unruptured ectopic, subserous fibroid and chronic appendicitis	1	
Removal tube and ovary and exsection one tube, ventro suspension, normal appendectomy, for ruptured ectopic	1	
Bassini operation for inguinal hernia	9	
Bassini operation under cocaine for inguinal hernia	1	
Bassini and appendectomy same incision, for inguinal hernia, chronic appendicitis	2	
Bassini for strangulated inguinal hernia	2	
Bassini for strangulated inguinal hernia and uremia under cocaine	1	1
Bassini operation and removal of testicle, for strangulated inguinal hernia in sac of undescended testicle	1	
Bassini, double salpingectomy, appendectomy, myomectomy, ventro suspension, for inguinal hernia, double salpingitis, chronic appendicitis, subserous fibroid	1	
Mayo operation umbilical hernia	1	
Repair ventral hernia	1	
Supravaginal hysterectomy for fibroid of uterus	11	
Supravaginal hysterectomy and normal appendectomy for fibroids	4	
Supravaginal hysterectomy for fibroids and double pyosalpinx	7	
Supravaginal hysterectomy for fibroids complicated by pregnancy	2	
Supravaginal hysterectomy for intraligamentary fibroid	1	
Supravaginal hysterectomy for double pyosalpinx	2	1
Supravaginal hysterectomy for profound and continuous metrorhagia of menopause	1	
Supravaginal hysterectomy for intraligamentary fibroid and dermoid of ovary	1	
Supravaginal hysterectomy for fibroids and parovarian cyst	1	
Supravaginal hysterectomy for prolapse	1	

	Cases	Deaths
Total hysterectomy for rupture of uterus incident to forced delivery	1	1
Total hysterectomy for fibroids	1	
Total hysterectomy for persistent metrorrhagia	2	
Total hysterectomy for infected submucous fibroid	1	
Total hysterectomy and appendectomy for fibroid and chronic appendicitis	1	
Total hysterectomy for carcinoma of cervix	2	1
Total hysterectomy for sarcoma of uterus	1	
Colpo hysterectomy for complete prolapse	1	
Porro operation for fibroid obstructing delivery	1	
Suprapubic cystotomy for cystitis from enlarged prostate	1	
Suprapubic cystotomy for retention from enlarged prostate and uremia	2	1
Suprapubic cystotomy and retrograde catheterization of urethra with external urethrotomy for traumatic rupture of urethra	1	
Suprapubic cystotomy and retrograde catheterization of urethra with external urethrotomy for rupture of urethra from stricture	2	
Transperitoneal cystotomy and cauterization of polypus of bladder	1	
Cholecystotomy for gall stones	5	
Cholecystotomy and partial removal of gangrenous cholecystitis and gall stones	1	
Cholecystotomy and repair of hernia for gall stones and ventral hernia	2	
Internal Alexander, appendectomy for retrodisplacement and chronic appendicitis	1	
Ventro suspension, appendectomy for retrodisplacement and chronic appendicitis	5	
Ventro suspension, appendectomy, salpingectomy for retrodisplacement, chronic salpingitis and chronic appendicitis	1	
Ventro suspension for retrodisplacement	2	
Ventro suspension and myomectomy for prolapse and subserous fibroid	1	
Ventro suspension for prolapse	5	
Exploratory laparatomy and evacuation of pus for intramural abscess	1	
Exploratory operation for inoperable tumor in region of pancreas	1	
Exploratory operation, negative	2	2
Exploratory operation for supposed abscess of liver, found to be syphilitic hypertrophy	1	
Exploratory operation for encysted peritonitis complicating double pyosalpinx, drained through vagina	1	
Laparotomy for tubercular peritonitis	9	
Appendectomy for tubercular peritonitis involving appendix	1	
Exploratory operation for abdominal symptoms following railroad injury	1	
Exploratory operation for carcinoma of liver	1	
Exploratory operation for inoperable carcinoma of colon	2	1
Exploratory operation for inoperable malignant tumor ovary	1	
Laparotomy for release of adhesions	1	
Incision and drainage for abdominal abscess, due to cancer	1	
Incision and drainage for abscess communicating with bowel	1	
Incision and drainage perinephritic abscess	1	
Abdominal incision and drainage pyosalpinx	3	1
Incision and drainage abscess of liver	1	
Nephrolithotomy for stone in kidney	1	
Open operation for undescended testicle	1	
Posterior gastro enterostomy for duodenal ulcer	1	
Gastrotomy for feeding impermeable stricture of esophagus	1	
Gastrotomy for foreign body in esophagus	1	1
Fixation of sigmoid for volvulus	1	
Intestinal anastomosis for obstruction	1	
Resection of small intestine for obstruction	1	
Repair of colon for fecal fistula	2	
Resection of sigmoid for volvulus	1	1
Resection of cecum and portion of ileum for intussusception and gangrene of intestine	1	1
Drainage gunshot wound of abdomen	1	
Removal of cyst of omentum	1	
Incision and drainage abdominal abscess due to foreign body	1	
Repair of perforation gunshot wound of abdomen	3	1
Laparotomy for stab wound of abdomen with profound hemorrhage	1	
Laparotomy for gunshot wound of abdomen with hemorrhage	1	1
Resection of small intestine and enterostomy for rupture and separation from mesentery in railroad accident	1	1
Abdominal drainage for ruptured pyosalpinx	1	1
Median incision and release of strangulation for strangulated femoral hernia	1	1
Enterostomy for strangulated and gangrenous inguinal hernia	1	1
Incision and drainage abscess from malignant adenoma of intestine	1	1
	400	23

THE IMPORTANCE OF AN EARLY DIAGNOSIS IN GENITO-URINARY TUBERCULOSIS.*

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An early diagnosis in genito-urinary tuberculosis is of paramount importance. This fact

*Read before the District of Columbia Medical Society.

has been impressed upon us by our experience with undiagnosed cases of late tuberculosis that have come under our observation during the last few years.

There is probably no form of tuberculosis in which the patients suffer such excruciating pain and inconvenience as in some forms of this affection; and there is certainly no form in which the prognosis is as bad, unless the cases are early diagnosed, so that treatment can be instituted. We firmly believe that only through our ability to accomplish this can we ever hope to offer justice to these unfortunate individuals.

At times urinary tuberculosis is simply a phase of a general tubercular infection, but the consensus of opinion among urinary surgeons is that genito-urinary tuberculosis practically occurs as a primary infection—that is, that it occurs in persons in whom no other tubercular lesion can be found; and in these cases, if it is possible to remove the source of infection a large percentage of them will recover. In a very large number of these cases we find the primary infection located in the kidney. It is an accepted fact that renal tuberculosis in a great majority of cases begins in one kidney. (I might quote Alberon, Caspar, Lewis and other men of international reputation to substantiate this.) Vigneron, in 250 autopsies on subjects dying of tuberculosis of the urinary tract, found 123 cases in which one kidney only was involved. In practically all of these cases the lower urinary tract was involved, which means that in fifty per cent. of these autopsies, although the patient died of urinary tuberculosis, the lesion was confined to one kidney. If these cases had been diagnosed early, unquestionably the proportion of involvment of both kidneys would be much less. Campbell, in *The Annals of Surgery,* reports 100 cases of renal infection in which only seventeen had infection of both kidneys. Tuffier reports 205 surgical cases of which he believes ninety-nine were unilateral and primary. Israel reports a series of twenty-one, of which he believes sixteen were unilateral and primary.

The other kidney unquestionably often escapes infection for some time, although changes do occur in the parenchyma of the organ that show that no tubercular lesion, such as mild inflammatory changes that produce an albuminuria from the sound side. The bladder is oft times affected by the tubercular urine passing over its mucous membrane, and if this continues for a great length of time the opposite kidney, experience shows us, becomes involved. Whether an ascending infection takes place on this side or not, we are unable to state, or whether the toxemia resulting from the affected kidney, that possibly produces this change we have heretofore mentioned in the good kidney, lessens the resistance of that organ, so that infection could more readily occur through the blood channel. Observers have not been able to produce an ascending tubercular infection experimentally on animals, but a hematogenous infection can be readily produced. Now, as we have learned that tuberculosis infects one kidney many months before any symptoms are apparent in the other, it behooves us just as soon as we observe any symptoms of a urinary tubercular trouble to direct our attention to the kidneys to eliminate them if possible as the seat of trouble; and, on the other hand, if not possible to determine at once which of the two kidneys is the affected one, and just how nearly normal the other may be. It is interesting to note in this connection that oft times the albuminuria which is present in the good kidney will completely disappear when a tubercular kidney is removed.

The symptoms and diagnosis of renal tuberculosis in the very early stage, as in other localized conditions, escape notice. Soon, however, a certain group of symptoms are presented which should at once arouse our suspicions. The general health becomes impaired, the patient may be either free from fever, or run an irregular temperature. It is usually not a great while before a palpable enlargment of the kidney can be detected; this is often not due to the kidney itself being enlarged, but to the adhesions of the perinephritic tissues to the capsule of the kidney, causing the kidney to be less mobile and appear larger in size than it really is. It is a well-known fact that the tuberculosis begins in the pole of the kidney, either the upper or lower one, and this is explained by separate and distinct arterial supplies in different parts of the kidney. This is another cause of the apparent enlargement of this organ in tubercular conditions.

The pain in the kidney is not marked, although the patient complains of a heaviness and some soreness on deep pressure. The urine contains blood and pus in varying amounts; often the first symptom noticeable to the pa-

tient will be the passage of bloody urine. Pus is more constantly present in tubercular urine than any other element, and we might state here that it is always well to consider the possibility of tuberculosis in any patient who has purulent urine without a history of urethral infection, the passage of instruments or some acute infection, such as typhoid fever or some of the suppurative wound diseases. Caspar lays great stress upon acid pyuria as a diagnostic feature of kidney tuberculosis. Even a mild grade of pyuria that does not give many organisms on culture in ordinary media, and pus in the urine which does not give organisms on smears is very suggestive of urinary tuberculosis. The presence of the tubercle bacilli in any numbers is indisputable sign of tuberculosis.

The absence of the tubercle bacilli in the urine does not negative the possibility of tuberculosis. Of course, we must always be careful in an examination to exclude the possibility of contamination by the smegna bacillus. We would say that the tubercle bacillus has been demonstrated in from thirty to forty per cent. of the cases of urinary tuberculosis that have come under our care. Of course, it is possible to make a mistake when no rupture of the tubercular process into the pelvis of the kidney has taken place. But this condition must be present very early in the disease.

Tuberculin and Inoculation.—In obscure cases the tuberculin test obtained by injection or skin reaction is valuable as a diagnostic point, although we may be misled if the patient should have tuberculosis in some other part of the body. Inoculation of animals is important, but in some cases valuable time may elapse in waiting six weeks for an autopsy on the animal.

Usually the next organ to be attacked after the kidney in a descending infection is the bladder. This organ is unquestionably quite resistent to the tubercle bacillus, and if given half a chance will often recover completely, if the affected kidney be removed, and as a consequence the infected urine ceases to flow over its mucosa. Therefore, we should determine immediately as to the existence of a renal infection, as to which is the affected kidney; and the only accurate way to accomplish this is by ureteral catheterization. The possibility of infecting the other organ has been urged against this, but all men doing this work have concluded that this danger is very slight. This danger is minimized by merely passing a catheter 2 c. m. up the ureter and collecting the urine at that point. The segregators are not as accurate as a ureteral catheter, because the chance of leakage from the affected side of the bladder is always present, and also the contamination of the collected urine by the bladder mucosa. It can be readily understood how, if leakage should occur, purulent urine would be collected and cause a diagnosis of double involvment to be made, when, in reality, a ureteral catheterization would show normal urine from the opposite kidney. We personally know of such cases. The phloridzin and indigo-carmin test is of value to indiacte the functional activity of the good kidney. We believe also that the urea estimation of the catheterization specimen from the good kidney, compared with that from the diseased one is of importance.

A few cases of primary ureteral tuberculosis have been reported one each by Bang, Gemme and Tirard's case came to autopsy, and showed no tuberculosis of the kidney or bladder, but miliary tubercles all along the ureter. Tubercular ulcerations of the ureter are quite rare, even when the patient has tuberculosis of the bladder and kidney. In these cases it is usual to see the ureter very much thickened by great proliferation of the connective tissue. The infrequency of ureteral infection is another argument in favor of the slight danger of ureteral catheterization in these cases. It is only in the past ten or fifteen years that the true pathology of urinary tuberculosis has been understood. Before this time it was thought to be always due to an ascending infection, and all sorts of operations were devised for relieving the tubercular bladder, when, in reality, in ninety-eight per cent. of the cases, the affection is a descending one, and the only possible operative relief for the bladder is the removal of the kidney.

The symptoms of infection of the bladder are frequent and painful urination, often accompanied with tenesmus. Although it is possible to have these symptoms when no disease of the bladder is present, it is a well known fact that disease of the pelvis of the kidney can cause these symptoms. The frequency and painfulness of urinations depend largely on the location of the ulcers in the bladder; if located

in the region of the trigone, and involving the urethral orifice, the pain and the difficulty will be much more marked than if the ulceration is nearer the posterior wall of the bladder.

Primary tuberculosis of the bladder is unquestionably rare. The appearance of the bladder mucosa, unless very late in the disease, is rather characteristic. The tubercles before ulceration appear, on cystoscopic examination, as small grayish spots surrounded by a red areola. The early ulcers appear with punched out edges, the base being covered by a grayish purulent material. An anemic area is seen at the margin of the ulcer and this area is surrounded by a bright red zone. This picture is typical. As the disease progresses these areas coalesce, forming large ulcers. As the tubercular cystitis becomes more chronic, nearly always we have some secondary infection. Hyperplasia of the connective tissue of the bladder wall takes place, due to the infiltration of the tubercular process and the attempt of nature to prevent its extension. The result is a contracted bladder that will often hold only an ounce or two, the patient urinating with great frequency and suffering excruciating pain.

This late picture of bladder tuberculosis is one of the saddest sights that we have ever seen in surgery. We feel sure that all operative procedure on tubercular bladders has been abandoned. If any one has been unfortunate enough to have ever operated on one of these cases we are sure the first attempt will be the last. The only possible hope for bladder tuberculosis is an early diagnosis and removal of the affected kidney. Even though the tubercular process be marked in the bladder, if one kidney only is involved and that be removed, the bladder tuberculosis will recover in the great majority of cases spontaneously. If it is found that no operative procedure can be instituted the tuberculin treatment associated with proper hygienic surroundings, food, and fresh air, affords the best chance for the patient. We have never known of a case being cured by this treatment, but the symptoms are relieved and life is made bearable. Local measures seem to exert very slight influence on bladder tuberculosis, although a preparation known as gomenol has been used quite extensively, but its results have not been especially brilliant.

The safest operative procedure for relieving the terrible tenesmus and frequency of urination from advanced bladder tuberculosis where both kidneys are involved, is to do a double nephrotomy and insert a tube into the renal pelvis to collect the urine, thereby preventing its passage into the bladder. Watson, of Boston, has a very ingenious little box that is worn around the patient's waist; the tube collects the urine, passing it on to the little box from where it is drained off at regular intervals. By this method the patient passes no urine into the bladder and the frequent and distressing urination is eliminated. This, of course, has no curative value.

Without doubt, pactically all cases of urinary tuberculosis prove fatal unless an early diagnosis is made and the affected kidney removed. We know of but one case that has apparently recovered without operation. This was a case of Dr. Stone's, of this city. Alberon challenged the Academy of Medicine in Paris to produce a single case of renal tuberculosis that was cured except by operation. The conclusions of a paper written by Dr. Quick, of Wisconsin, might be quoted. He says: "When we are dealing with unilateral renal tuberculosis we have a condition incompatible with health and in the end destructive to life. The disease is located in a paired organ, one of which can be spared by the economy. The only reasonable indication seems to me is a radical extirpation."

Tuberculosis of the prostate usually affects young adults; rarely children and old men. Gonorrhea, especially in a chronic form, unquestionably predisposes to its development; the effect of this is the same as an injury to the gland and lowers its resistance. It is conceivable that tuberculosis may gain access to the urinary passages from without either from cohabitation or from infected catheters, although such occurrences are rare, as this disease is nearly always associated with tuberculosis somewhere else in the urinary tract. It practically never occurs as a primary tubercular lesion. The patients either have phthisis and the affection is carried by the blood stream, or else it is carried by the passage of infected urine through the posterior urethra. The symptoms are those usually described in bladder tuberculosis. In addition patients often have hemospermia, but this is not pathognomonic, as it is not infrequently associated with simple prostatic involvement. As the

disease progresses caseous masses can be felt in the protrate which break down to form fistulæ. The finding of tubercle bacilli in the prostatic secretion obtained by massage after thorough cleansing of the urethra is an almost sure sign of tubercular prostatitis. The prognosis is not altogether unfavorable if the involvement of the prostate is not great, the patient's resistance good, and the source of infection one kidney which can be removed. If on the other hand the prostate and seminal vesicles are involved and the disease appears secondary to involvement of the testicle the prognosis is most grave.

Tuberculosis of the seminal vesicles is nearly always associated with tuberculosis of the testicles and prostate. It occurs during the period of actual sexual life, gonorrhea being given as a predisposing cause. The diagnosis is made by palpation per rectum of tubercular nodules in the vesicles. Early diagnosis is difficult. Treatment by surgical procedure has not given favorabe results, although we have seen apparently unquestionable involvement of the vesicle, asscoiated with the tuberculosis of the epididymis, recover after removal of the affected testicle.

Tuberculosis of the testicle is relatively a frequent disease; it may develop primarily and is probably the only primary form of tuberculosis of the genito-urinary tract except the kidney. More often it is associated with kidney tuberculosis or some tubercular process in other parts of the body. Trauma and previous gonorrheal epididymitis are predisposing causes. The disease nearly always begins in the vas deferens of the epididymis, and the testicle itself does not become diseased until late in its course. More commonly the tubercular process begins in the body of the epididymis. Nearly always the disease is unilateral at the outset. In quite a number of these cases no sign of any other tubercular lesion can be demonstrated; the disease may extend along the vas involving the prostate and seminal vesicles; then in turn passes down the vas of the other side to involve the opposite testicle. The onset is usually insidious and painless, atlhough at times a very acute miliary tubercular condition will manifest itself which may be quite painful, causing distress to the patient. The process invariably has its origin in the epididymis and later involves the testicle. Caseation takes place, the skin becomes adherent to the epididymis, liquefaction of the caseous mass occurs and fistulæ result. It is not always the weak or phthisical subject who is thus affected, for it often occurs in strong young persons in whom no one would ever suspect tuberculosis. The disease may be purely local, as far as we can tell, and may exist for many years without giving rise to metastasis. In some cases the vas deferens appears practically normal on palpation; in others tuberculous nodules can be felt along its course.

The differential diagnosis between tuberculosis and other diseases depends upon the usual slow course, slight amount of pain, the rough surface of the epididymis and testicle, the primary involvement of the epididymis and its tendency to adhere to the skin, and later, of course, the occurrence of fistulæ. In gonorrheal epididymitis the onset is acute, the pain greater, and the involvement almost invariably begins in the globus minor. On the other hand, in tuberculosis the majority of cases begin in the globus major. In malignancy and syphilitic diseases the lesion has its origin in the body of the testicle. So insidious is its course that it may be far advanced before recognized, and ofttimes soreness and pain will not develop until adhesions to the skin have taken place. A number of cases of tuberculosis of the testicle if operated on will be cured. Castration unquestionably prevents involvement of the opposite side and the patients, as far as we can tell, recover. Even in cases of double tubercular epididymitis recovery at times follows double epididymectomy. One case of this character has remained well for five years. There are any number of recoveries reported where the tubercular condition was unilateral.

1725 *N Street, N. W.*

KIDNEY CONGENITALLY MISPLACED IN THE PELVIS—REPORT OF A CASE.*

By JAMES W. HENSON, M. D., Richmond, Va.

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In February, 1909, the writer was called to see Mr. M., aged 22, who is a native of Augusta County, Virginia, and had been accustomed to

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outdoor life until he began the study of pharmacy some months before the above date. He was suffering with a throbbing pain and pronounced tenderness in the abdomen in the upper part of the left side of the hypogastic region. There was a little nausea—not much. Bowels were not constipated. There seemed to be no change in the quantity of urine and urinalysis disclosed nothing abnormal. No record was kept of pulse rate or temperature, but neither were much above normal. There was no rigidity of the abdominal muscles, but physical examination revealed, in the region above mentioned, a distinct mass, very tender and apparently at that time about the size and shape of a small cocoanut. The acute pain gradually disappeared by confinement to bed for a week or ten days with laxatives, dieting and counter-irritation, but the tenderness remained and the size of the mass was practically the same for about two weeks after getting out of bed, when it very rapidly disappeared, the patient believed. He thought it had disappeared because he was unable to find it. The writer was still able to feel the mass distinctly, though it was very much smaller. There was a history of several previous attacks—not less than four or five, each having the following characteristics: More or less rapid onset, acute throbbing pain in the upper part of the left side of the hypogastric region, lasting from three to ten days; pronounced tenderness in the same region, which did not subside for several days after the acute pain was relieved; nausea, which was more pronounced in the first attack and least so in the last; apparently little elevation of temperature and apparently no abnormality in the quantity or quality of urine.

The enlargement or mass was not noticed in the first attack, but in all the others its presence was manifest early, though it apparently disappeared several days after the subsidence of the more acute symptoms. The first attack, in the autumn of 1905, was just after a hearty supper. The patient says that at no subsequent time did there appear to be any relation between diet, drinks or condition of bowels and the attacks.

The writer gave no positive opinion as to the nature of the enlargement, but advised exploratory incision, to which the young man readily agreed. Circumstances necessitated deferring the operation, which was done by the writer May 27, 1909.

The mass proved to be a congenitally misplaced kidney lying in the true pelvis, chiefly to the left of the median line. Since we now describe the sigmoid flexure of the colon as reaching to the middle of the sacrum, the kidney lay behind the lower end of this portion of the gut and the upper end of the rectum. To reach the organ the right layer of the sigmoid meso-colon was opened. The ureter was necessarily very short. The pelvis of the kidney was distended to the capacity of three or four ounces, but there was left a good deal of functionary kidney tissue. Periodic obstruction of the ureter, of course, explained the symptoms. Nephrectomy was done.

The writer regrets that he was unable to make a thorough examination of the ureter and that the blood supply of the kidney could not be traced to its source. On account of the position of the organ and its relations, the consumption of time necessary to such investigation might have been prejudicial to the welfare of the patient. As it was necessary to drag the kidney upward to get a ligature around the vessels and as the pedicle was very short the presumption is that the blood supply came from the internal iliac artery.

As there was no thought at the time of reporting the case, the specimen was, unfortunately, not preserved. The writer has since decided to bring the case to the notice of the profession, has written to several surgeons and some anatomists to get statistics from their experience and observation and wishes to gratefully acknowledge the courtesy received from these gentlemen. It has been but a short time since some of the letters of inquiry were written, but replies have been received from the following: Drs. J. B. Murphy and Albert J. Oschner, of Chicago; Dr. W. J. Mayo, of Rochester, Minn.; Dr. William Keller, Professor of Anatomy, University of Texas; Dr. George A. Piersol, Professor of Anatomy, University of Pennsylvania; Dr. George Peteroff, Demonstrator of Anatomy in the same institution, and Dr. R. H. Whitehead, of the University of Virginia.

All of these are men who have abundant opportunity for observing anomalies. Several

of them mentioned cases of misplaced and displaced kidneys that had been observed, but only one, Dr. W. J. Mayo, had seen this viscus congenitally misplaced in the true pelvis. Dr. Mayo cited two cases, both women, each operated on for pelvic tumor which was tender and painful. In each case the tumor was a congenitally misplaced kidney in the right side of the true pelvis.

The writer found one case in literature. Guinard, in a French journal in 1893, reported this case, stating that the left kidney was congenitally misplaced in the pelvis to the left of the rectum; that the ureter was very short and the blood supply came from the bifurcation of the aorta. The evidence obtained clearly establishes the fact that this particular abnormal position of the kidney is an extremely rare one. When this fact is considered in connection with the above clinical history, remembering also that in Dr. Mayo's cases, the tumor was tender and painful, one is apt to reach the conclusion that such a position of the kidney or the relations of the organ in this position must have some etiological bearing on the pathology in this case.

HYDRAMNION, WITH REPORT OE A CASE.*

By JOHN M. WILLIAMS, M. D., Disputanta, Va.

Hydramnion, or dropsy of amniotic-sac, is a condition characterized by excess of liquor amnii, and is not spoken of by this term unless sufficient to produce systemic symptoms, and must be two litres or more in quantity. The chronic form is the type more frequently seen, and as distension is so gradual it is hard to say whether the fluid is in excess or not, as some women are capable of carrying a larger quantity than others without any symptoms of inconvenience. This condition is almost twice as frequent in multiparæ as in primiparæ.

The acute form develops much more rapidly, usually within a few days, which causes great suffering and more danger to mother and child than chronic, also more apt to develop fever.

Symptoms arise from purely mechanical causes and are due to pressure exerted by overdistended uterus on adjacent organs. Many also have reflex disturbances—viz., nausea or vomiting, resulting in emaciation and weakness from lack of nourishment.

The cause seems to be a mooted question. There are many theories advanced, none of which we are absolutely sure of in any particular case. Twin pregnancies have proven more often the cause, supposed to be due to the vessels of one twin taking a shorter course than the other; consequently more blood going to one with short vessels, resulting in more rapid growth and a larger and more powerful heart. This, of course, causes more absorption from placenta and elimination from emunctories of fœtus. Malformations of fœtus, obstruction to vessels in cord, diseases of fœtus—viz., affections of heart and kidneys, causing excretion of urine in abnormal quantity, syphilis of mother or fœtus are named as other prominent causes. I had the fortune or misfortune, I don't know which, this year to have a case which of itself demonstrated a cause I have been unable to find any literature on, and very interesting from the unusual, and I may say, almost miraculous termination, not by any skill of my own, but wonderful mother nature.

Mrs. A., aged 30; previous health good; fifth pregnancy. I was called to see case on January 1, 1909. Patient said she had menstruated last the latter part of September, which would make about the third month of pregnancy. She seemed to think she had gotten too large the past few days. I found on palpation the fundus about half way between symphysis pubis and umbilicus, as this was the only thing she complained of. I did not make internal examination but told her I thought probably she was mistaken about developing so fast. I told her I really thought she was further advanced than she thought, and would see her again in about a week—which I did.

I found her abdomen very much larger, fundus a little above umbilicus and patient right much excited and anxious about her condition. Internal examination was made and found uterus jammed down very low in pelvis—in fact, cervix almost visible and marked retroflexion and fixed in this position. I prescribed saline-laxative and told patient I would see her the next day, thinking probably after emptying the bowels I might correct the displacement. The next day I found fundus

*Read before the Southside Virginia Medical Association, Courtland, Va., September 14, 1909.

about two inches higher and unable to move position of uterus by internal manipulation.

The next day I had a consultant from Petersburg, and found fundus at ensiform cartilage. He verified my diagnosis of acute hydramnion. We could find no cause unless the displacement of uterus was causing some abnormal pressure. We put her on drachm doses of comp. jalap powd. and decided to await developments. That night the membranes ruptured and I was hurriedly called to see her. She said she had lost about one gallon of water, and, of course, was very much excited. I told her not to feel alarmed, that as soon as all the water escaped I thought labor would set in and she would abort. I kept in close communication with her, seeing her every day, and to my surprise she had a continuous flow of water, and uterus was about six days reducing to normal size, and I am satisfied patient was losing a gallon, or probably two gallons, per day. At this time the Petersburg consultant saw her again and we found her having hard labor pains. Examination revealed cervix slightly dilated and arrival of show, but couldn't move uterus out of its fixed position. I left patient with competent nurse and told her I would see her again in a few hours, and I thought all her troubles would be over soon. I arrived eight hours later, found patient quiet, all pains ceased, and on examination found the uterus had raised up out of hollow of sarcum and cervix retracted, and a hard ridge on anterior surface of uterus, showing that expansion had been all on that surface.

At this stage I refrained from making a prognosis, though I told her she would probably abort sooner or later. I watched her every day for about one month, with patient doing well in every respect.

On June the 20th, I delivered her of an 11-pound boy. The only abnormalities I found were two small punctures in membrane near one the child came through.

In my opinion this is a clear case caused by displaced uterus, resulting in a happy termination for mother and child.

Hoping this experience might be of some benefit to the profession prompted me to select this subject, thereby demonstrating to the profession the wonderful part nature plays in the cure of disease and how helpless we would be without her aid.

THE CAUSES, SYMPTOMS AND DIFFERENTIAL DIAGNOSIS OF PYOSALPINX.*

By BROOKE M. ANSPACH, M. D., Philadelphia, Pa.

The commonest cause of pyosalpinx is the gonococcus, although the streptococcus, the staphylococcus, the tubercle bacillus, the colon bacillus, the pneumococccus, and the bacillus pyocyaneus also may produce suppurative inflammation of the tube. Of the organisms mentioned, the four most common are the gonococcus, the streptococcus, the staphylococcus, and the tubercle bacillus.

The lesions caused by the tubercle bacillus are less apt to be acute, and their clinical significance differs considerably from the other varieties of infection, and will not be considered in this article. As a rule, these cases do not present the same clinical picture that is found in acute gonorrheal or septic salpingitis. It is, nevertheless, true that the tuberculous nature of a pyosalpinx is often unsuspected until the time of operation.

There has been considerable difficulty in determining with certainty, the variety of infection in pyosalpinx; thus in 409 cases collected by Gebhard in which the pus was subjected to bacteriological examination, no organism at all was found in 226, or 55.4 per cent. The 183 cases in which microörganisms were isolated, gave the gonococcus 92 times, or 50.6 per cent. Streptococcus and staphylococcus infections were present in 29.2 per cent. In a few cases only, the pneumococcus, the colon bacillus, and saprophytic organisms were present.

In the early stage of suppurative gonorrheal salpingitis, the Fallopian tube is swollen and congested and contains pus. The infection is at first limited to the mucous membrane, having spread by continuity of surface from the endometrium. The tube being swollen and heavier than normal, has a tendency to descend in the pelvic cavity, and the pus which escapes from the outer ostium into the pelvis, sets up a localized peritonitis about the fimbriated extremity so that from adhesions and exudate the tube is finally closed. The production of pus still going on within the tube and its exit through the abdominal ostium being no longer possible, the tube lumen becomes distended, except in those unusual cases in which

*Read before Medical Society of State of Pennsylvania, at Philadelphia, October, 1909.

the inner end of the organ remains patulous and the pus escapes into the uterine cavity. The wall of the tube becomes infiltrated and edematous and adherent to the surrounding structures.

The pathologic changes in the pelvis associated with gonorrheal pyosalpinx are nearly all the result of the local peritonitis which accompanies its formation. The surface of the ovary becomes inflamed and adheres to the peritoneum of the pelvic wall or the neighboring organs. The ovary may undergo cystic degeneration from a thickening of the tunica albuginea which prevents a rupture of the Graafian follicles. Occasionally, when an unruptured follicle is in close apposition to the outer extremity of a pyosalpinx the tissue intervening between them undergoes necrosis and the tubal pus mixes with the follicular fluid; or the bacteria in the tube penetrate the intervening septum and infect the Graafian follicle by way of the lymphatics.

In cases of suppurative salpingitis, caused by the streptococcus or the staphylococcus, the inflammation does not so particularly affect the mucous membrane; although the staphylococcus may pass into the tube by way of the mucosa, both the staphylococcus and the streptococcus are more likely to reach it through the lymphatics or the blood vessels of the broad ligaments. There is, therefore, more infiltration of the broad ligament and the mesosalpinx, more serious involvement of the ovary and the pelvic peritoneum, and more likelihood of an accompanying cellulitis.

The symptoms of acute pyosalpinx resemble closely those of acute pelvic peritonitis. In the gonococcus form, the initial attack is often synchronous with a menstrual period, either beginning during the flow or shortly after it subsides. The patient complains of severe pain in the lower abdomen, worse perhaps on one side than on the other; there is abdominal rigidity, tenderness and distention. The temperature rises to 101° or 103°; the pulse and respiratory rates are proportionately accelerated. The bowels are constipated and there is some nausea and vomiting. At this stage, the result of pelvic examination, if the attack is the original one, is not satisfactory. There is usually much tenderness and rigidity, and the examiner can ascertain no more than that the uterus is somewhat fixed and that palpation of the vaginal vault is very painful.

Under appropriate treatment, the symptoms of acute salpingitis subside usually within three or four days; the temperature falls, the pulse rate is lessened, and the subjective complaints are no longer present. It is at this time that on pelvic examination the characteristic lesions can be felt in the pelvis. It is not at this time, however, that the question of diagnosis is most important.

Acute pyosalpinx must be differentiated first of all from acute appendicitis. In making this distinction, the patient should be examined for evidences of gonococcus infection—the urethra, Bartholin's glands and the cervix being subjected to careful inspection, and if it is expedient, smears being taken from each of these parts. The pain in pyosalpinx is usually nearer the median line; it is less confined to one side and it is lower than the pain in appendicitis. A difference between the right and the left rectus muscle is not so often noted. The symptoms of nausea and vomiting are not so marked, and all symptoms subside more quickly under expectant treatment. The leucocyte count is of some value, and as a general rule, it may be said that the increase of leucocytes is considerably greater in suppurative appendicitis than in suppurative salpingitis.

With the exception of appendicitis, there is no particular lesion from which it is decidedly important to differentiate acute gonococcus pyosalpinx, within a few hours. An ovarian cyst with a twisted pedicle, a tubal pregnancy and an acute diverticulitis of the sigmoid may bear some clinical resemblance, but they are less apt to require an operation within a few hours, and in the majority of cases, can be treated expectantly until the diagnosis is settled. The greatest difficulty arises in distinguishing between appendicitis and salpingitis when the appendix is low down and hangs over the brim of the pelvis. Sometimes the organ is found adherent to the right tube and ovary, and this fact illustrates how difficult or impossible it may be to differentiate between the two affections. A lesion in one organ may secondarily affect the other.

Purulent salpingitis caused by streptococcus or staphylococcus infection almost invariably follows abortion, labor or some instrumental

manipulation of the uterovaginal tract. The general symptoms are usually more marked than those of gonococcus salpingitis. The pulse is faster, the temperature is higher, and there are more pronounced evidences of septic intoxication. The local evidences of disease may be very slight. If there is no retention within the uterus of decomposing material, almost nothing may be found upon bimanual examination except perhaps some enlargement and tenderness of the uterus. In some of the most serious cases, death may occur from toxemia before the local evidences have had time to form. The suppurative inflammation of the tube is almost invariably accompanied by a suppurative inflammation of the ovary, considerable infiltration and thickening of the broad ligaments, and more pelvic exudate than is usually found in the purely gonorrheal cases. The pelvic mass, therefore, if it does form, is usually denser and larger. The clinical differentiation, however, between the two forms will depend largely upon the history.

Under appropriate treatment, an acute pyosalpingitis usually subsides, the enclosed pus loses its infectious properties; there is a tendency for it to become inspissated and in some cases to be almost entirely absorbed and replaced by a serous fluid (hydrosalpinx). It is possible that if the pelvic organs could be kept absolutely quiet and a reinfection prevented, this would happen in all cases. As it is, however, a re-infection frequently occurs, or the encapsulated pus may be squeezed from the tubes by various movements—douching, coitus, straining at stool, etc.—causing a renewed attack of local peritonitis. This may be due more to the irritating qualities of the old pus than to any activity of the originally infecting organism.

The symptoms of chronic pyosalpinx are the result of pelvic peritonitis which binds the tube and ovary to the side of the pelvis, to the uterus, to the bladder or to the rectum. From these adhesions there are vesical irritability, constipation, painful defecation backache, pains referred to the limbs from pressure on the nerves which pass through the pelvis, profuse and painful menstruation, tympanites, and chronic diarrhœa.

119 *South Twentieth Street.*

PRESIDENTIAL ADDRESS.*

By D. PERCY HICKLING, M. D., Washington, D. C.

The time has now arrived when the retiring president must deliver his official address to the members of the Medical and Surgical Society.

I would first of all express my high appreciation of the honor you conferred upon me one year ago. I have always considered it a pleasure as well as a distinction to be a member of the Medical and Surgical Society of the District of Columbia, and when that body unanimously elected me its president I assure you it was heartily appreciated.

It has been said that when a man delves into reminiscences it is a sign of old age. Should this be true, then I may surely avail myself of the privilege of recalling the past, as this year marks the twenty-fifth mile-stone of the active practice of my profession in the District of Columbia.

In looking back over the three years spent in the third and fourth stories of that historic structure situated on the corner of Tenth and E Streets, N. W., which now stands, as of old, with very little change in its outward appearance except that created by wind and weather, it would seem as though the era of medicine was just dawning, although at that time seven professors, comprising the faculty, undoubtedly believed that they were giving us in their able lectures all that it was possible to know of the science of medicine. It was about this time that the specialities were first recognized in the regular teaching course of the medical school, when Drs. Carroll, Morgan, Burnett, McArdle, Adams, Elzy, and Schaeffer gave us a summer course in laryngology, the eye, venereal diseases, legal medicine, diseases of children, and the microscope. A few years before this time Lord Lister gave his discoveries to the world, and one of the prizes offered by the faculty consisted of the Lister Steam Spray, which was intended to spray upon the wound, the instruments, and hands of the operator during the performance of surgical operations. It was soon after this that laboratory work gained its important position in the medical teachings of all the schools, and for awhile the laboratory was looked to not only for research work, but diagnosis and even for treatment.

*Read at a meeting of the Medical and Surgical Society of District of Columbia, November 4, 1909.

After this laboratory period, if I may call it such, came the diagnostic period, when every effort of the doctor was strained towards the correct diagnosis, as if this were the epitome of the healing art, and were I a prophet, or even the son of a prophet, I would not hesitate to say that we were now on the eve of a therapeutic epoch, where the treatment would receive the attention of the medical world even to the exclusion of some of the other important attributes of our profession. In looking over the past twenty-five years it would seem as though therapeutics had been almost neglected by the students of our profession, and I have often thought that the patent medicine man, the homeopath and the osteopath, and all the irregulars, owed their success more to the neglect of this important branch of medicine by our profession, than to any merit in their own special methods of alleged cures.

In our own society the year has been a most interesting one, many able papers having been presented by its members with interesting and helpful discussions. There seems, however, to be a sincere difference of opinion amongst the members of the society on the question whether we shall have one or two papers presented at each meeting. Theoretically, the arguments advanced in favor of the one-paper meeting were very convincing, and it was, in my judgment, largely to these academic arguments that the one-paper amendment to the constitution was adopted. I was glad to see the experiment tried, but I now feel sure that those men who have been members of this society when the two-paper program prevailed are convinced that two papers are not too many, and that the pleasure and profit of the evenings were two-fold as great under the old constitutional provision, and that one long paper, even though freely discussed, will never prove as attractive to all the members of the society.

In my own specialty the year has brought forth material advancement in the study and treatment of nervous and mental diseases; Kraeplin's work on the symptomatology and classification of the insane is gaining every day, and now seems to be generally accepted by the leading men in this country. The modern methods of psychological study are proving of great interest and promise to yield more practical results than have been obtained from the pathological laboratory. The eye symptoms of dementia precox and the association tests for the insane are still being used and studied by many clinicians, while the treatment of dementia precox—that form of insanity which occurs in one-fourth of all asylum admissions at the present time—has made little progress. In neurology the general medical journals have been publishing more articles on this special branch than usual. The special journals upon nervous diseases have been devoting a large portion of their space to the study of symptoms based on pathological findings and have shown a number of interesting conditions. While the study of epilepsy is being actively carried on by a large number of special men, who are devoting their whole time to the study of this condition, yet the practical results which can be used by the general practitioner are very few. The work of Cushing upon the pituitary body is not only interesting, but of great practical importance; while Patrick, of Chicago, has been using with considerable success interneural injections of alcohol for spasmodic conditions of the muscles of the face. The work of Schwab and Allison with the surgical treatment of athetosis is not only successful, but has opened up a new field for the relief of sufferers from this distressing condition.

In conclusion, I want to thank the members for their uniform courtesy and consideration, as well as kindly aid during the year that I have been your president.

Book Notices.

Practical Dietetics—with Specal Reference to Diet in Diseases. By W. GILMAN THOMPSON, M. D., Professor of Medicine, Cornell University, Medical College in New York City, etc. Fourth Edition. Illustrated. Enlarged and completely rewritten. New York and London. D. Appleton & Co. 1909. 8vo. 928 pages. Cloth $5.

The fact that this book is now in its 30,000 printing tells of the great demand for it. The present edition is practically a thoroughly rewritten treatise. It is a book which possesses the special value of giving the advice that the practitioner needs. Part I deals with foods and food preparations in general; Part II speaks of stimulants, beverages, condiments, etc. Part III takes up the cooking of foods—their preparation and preservation—the

quantity of food required. Part IV. concerns itself with special conditions influencing foods, such as age, race, heredity. Part V. treats of food digestion—conditions which especially affect digestion. Part VI considers the general relation of food to special diseases, and diseases which are caused by dietetic errors. Part VII refers especially to methods of feeding the sick. Part VIII is a most important one relating to diet in disease, taking them in the following order: In infectious diseases; diseases of the respiratory system; of the circulatory system and blood; of the urinary system; of the alimentary canal; of the intestines; of the liver; of the nervous system; of skin diseases; diseases especially influenced by diet; diet in miscellaneous diseases; diet for surgical patients, etc. An appendix contains a number of receipts, general rules for prescribing a dietary, etc. We have given this epitome of the Contents in order to show the practical caste of the book, and its general range of usefulness to the practitioner. An excellent Index concludes the volume.

Bier's Hyperemic Treatment. By WILLY MEYER, M. D., Professor of Surgery, N. Y. Post-Graduate Medical School and Hospital, etc., and PROF. DR. VICTOR SCHMIEDEN, Assistant to Prof. Bier, University of Berlin, Second Revised Edition. Enlarged. Illustrated. Philadelphia and London. W. B. Saunders Co. 1909. 8vo. 280 pages. Cloth. $3 net.

The great demand for *"Bier's Hyperemic Treatment* in Surgery, Medicine and the Specialties" is shown by the fact that *four reprints* have been required in less than a year. It is an entirely *original,* practical work, and not a translation, by Dr. Meyer, who has adopted the treatment for the past fifteen years. Each year he has added new experiences, discarding what has been found immaterial, but improved on every technic that has suggested itself as useful. No one can get the range of usefulness of this treatment unless he has had experience with it, or gathers information from this book. The profusion of illustrations is very helpful to the reader.

Eradicating Plague from San Francisco. Prepared by FRANK MORTON TODD, Historian for the Committee. Cloth. 8vo. 313 pages. 1909.

This is a Report of the Citizens' Health Committee of San Francisco, with brief descriptions of the measures taken and the best means of getting rid of the bubonic plague, etc. The infection reappeared in San Francisco in May, 1907, which was apparently a recurrence of the Chinatown epidemic of 1900. Of the 160 cases in human beings, 77 died, mostly whites and of a good condition of life. The eradication of the disease consisted chiefly in the starving and destruction of infected rats. The report is very full of details, and gives instructive reading for all interested in questions of public health workers. No price seems to be affixed for the Report.

Practical Medicine Series. Under General Editorial charge of GUSTAVUS P. HEAD, M. D., Professor Laryngology, etc. Chicago Post-Graduate Medical School. Vol. V.—**Obstetrics.** Edited by JOSEPH B. DE LEE, A. M., M. D., Professor of Obstetrics, Northwestern University Medical School. With the Collaboration of HERBERT M. STOWE, M. D. Series 1909. Chicago. Year Book Publishers. 12mo. 236 pages. Cloth, $1.25.

As we have had frequent occasion to say of this "series" of ten volumes a year, at $10, it well covers the year's progress in medicine and surgery, and is well worth the price, either annual subscription or individual volume. *Volume* V covers the advances in *Obstetrics* for the year past, and is well arranged and indexed.

Myomata of the Uterus. By HOWARD A. KELLY, M. D. Professor of Gynecologic Surgery, Johns Hopkins University; and THOMAS S. CULLEN, M. D. Associate Professor of Gynecology, Johns Hopkins University, etc. Illustrated by August Horn and Herman Becker. Philadelphia and London. W. B. Saunders Co. 1909. Large 8vo. 723 pages. Cloth $7.50 net; half Morocco, $9 net.

In 1900 the authors issued their work on "Carcinoma of the Uterus," much in the same form as the present work. Later, the study of "Adenomyoma of the Uterus," in connection with myomata, reached such large proportions that it became necessary to deal with that subject separately; hence the volume by Dr. Cullen published in 1908. The special study of myomata in this connection has led to improved operative technique since 1900, when the mortality was about 5 or 6 per cent., until now it is less than 1 per cent. This work is of special value to every gynecologic surgeon especially, helping him in diagnosis and directing him in the line of most successful operative results. The book contains 388 superb

original illustrations, connected with the subject from its pathological, diagnostic, operative standpoints, etc.

Principles of Pharmacy. By HENRY V. ARREY Ph. G., Ph. D., Dean and Professor of Pharmacy, Cleveland School of Pharmacy, etc. With 246 original illustrations. Philadelphia and London. W. B. Saunders Co. 1909. 8vo. 1175 pages. Cloth $5 net. Half Morrocco, $6.50 net.

This is an excellent, practical book, the result of a decade of study and teaching, especially intended for students of pharmacy and for practical pharmacists; but contains also enough of useful information for each doctor to keep accessible for frequent reference. Being well up to date, it, of course, necessarily contains descriptions of many non-official drugs, etc., as well as those of the latest U. S. Dispensatory, the technic of the details of their preparation for prescriptions, etc. The first of the seven parts of the book deals with pharmaceutical processes; the second, with galenical preparations and certain unofficial ones; the third, with inorganic chemicals used in pharmacy; the fourth discusses organic chemicals used in pharmacy; the fifth presents a systematic grouping of chemical tests of the pharmacopeia; the sixth discusses the prescription from the time it is written until it is dispensed—and is a most important chapter; the seventh is devoted to laboratory work. The Index is full and helps ready reference to a subject.

International Clinics. Edited by W. T. LONGCOPE, M. D., Philadelphia, etc. Vol. II. Nineteenth Series 1909. Philadelphia and London. J. B. Lippincott Co., 1909. 8vo. 301 pages. Cloth.

This is the June, 1909, "quarterly of illustrated clinical lectures and especially prepared original articles on treatment, medicine, surgery, neurology," etc., etc., "by leading members of the medical profession throughout the world." This Volume II contains twenty articles—four on Treatment; four on Medicine; four on Surgery; two on Gynecology and Obstetrics; two on Pathology, and one each on Ophthalmology, Otology, Proctology and Psychiatry. Our regret is that want of space prevents further notice of this book, which contains such valuable contributions. Our advice would be for doctors to send *annual* subscriptions to the publishers, read the volumes as they are issued, and thus be amply rewarded.

Medical and Surgical Reports of the Presbyterian Hospital, City of New York. Vol. VIII. December, 1908. Edited by JOHN S. THACKER, M. D., GEORGE WOOLSEY, M. D. 1909. Board cover. 8vo. 371 pages.

This volume, well edited and published, besides much that pertains to the details of the hospital management, etc., contains twenty-four valuable scientific contributions on medical, surgical and like subjects by able authors based chiefly on their personal clinical observations in the hospital. Over thirty illustrations are introduced, mostly reproduced from photographs, etc. These contributions and illustrations have generally been published in leading medical journals of the country, and have been collected and arranged by the editors for this annual publication. No purchase price for the Report is stated.

Handbook of Diseases of the Rectum. By LOUIS J. HIRSCHMAN, M. D., Lecturer on Rectal Surgery and Clinical Professor of Proctology, Detroit College of Medicine, etc. With 147 illustrations, mostly original, including 2 Colored Plates. St. Louis. C. V. Mosby Medical Book and Publishing Co. 1909. Cloth. 8vo. 374 pages. $4.

It is unfortunate that such a practical, good book should be marred by "errata," especially as relate to spelling. Wherever a diphthong is proper two distinct letters are used. For instance—with rare exceptions—where the diphthong "æ" is called for, the two letters 'a e" are distinctly used. The same is to be said of "o e" for "œ," etc. Now established custom allows the use of "e" for such diphthongs, but we know of no authority for the use of two distinct letters instead. While this is a minor criticism, it so mars the systematic reading of the book as to amount to a daub on a fine painting. The true merits of the book consist in the practical teachings, both as to means of diagnosis and technique of treatment. Wherever the experience of the author differs from that of others he does not hesitate to say so. The illustrations are well selected for the purposes of practicability.

Influence of Sodium Benzoate on the Nutrition and Health of Man. U. S. Department of Agriculture. Report No. 88. Washington. Government Printing Office. 1909. 8vo. 784 pages. Paper binding.

Benzoate of sodium is largely used by pack-

ers as a preservative of foods. This report contains (1) an experimental study of the influence of sodium benzoate on the nutrition and health of man, by Russell H. Crittenden; (2) investigations on the effects of sodium benzoate on the health and general metabolism of man, by John H. Long; and (3) the action of sodium benzoate on the human body, by Dr. Christian A. Herter. Over 600 pages are taken up with tables, charts, etc. The general conclusion seems to be that, as manufacturers generally use it (0.1 per cent.), the consumer would have to take about 300 grains a day (or nearly two-thirds of a pound) of preserved food to ingest an amount of benzoate equal to a minimal daily dosage, which is not injurious to health. We presume the Report can be got for the asking by interested parties of the U. S. Department of Agriculture, Washington, D. C.

Editorial.

The Temperance Problem.

In keeping with the interest of the Pure Food and Drug laws of the National Government, a strong temperance wave is pervading the country, so far as the sale and misuses of alcoholic liquors are concerned; and this wave seems resistless in its progress. Throughout the country, even "prohibition" seems to be a leading political issue; and local option laws are being adopted in towns and counties where prohibition has not succeeded. In other places, the limiting of the number of bar-rooms and of the sale of liquors in restaurants is being undertaken, and licensed places are put under more strict police regulations. This last method undoubtedly has much to commend it *as a step* in the right direction, though it seems to have the effect of making the taking of a drink the more "respectable," as the specially high licenses required keep away from these places many of the roughs and toughs of the community. Unfortunately, however, these latter soon find out the clandestine "grog shop," and come out filled with mean whiskey to prowl about the streets as "drunks" and to find themselves in the police court the next morning.

In Richmond, high license has been adopted, and the number of places allowed by law for sale of alcoholics has been limited to one hundred and fifty. This is a cutting off of nearly one hundred and fifty like places. And all the licensed bar-rooms have to close their doors to customers at midnight, with screens removed for inspection etc., without opening again until 6 A. M.

Extreme measures to compel the total non-use of wines, whiskies, brandies, beers, etc., as also of morphine, cocaine, etc., for strictly medicinal uses, will perhaps never be successful; but as every-day beverages or habits of use the most stringent laws should be enacted, and the police authorities impressed that it is their duty to see such laws properly carried out. Physicians, no less than others, should be extremely careful in their recommendations or prescriptions of such things. Too many of us doctors, we are afraid, are callous, or at least careless, in our prescriptions of such things, and some druggists are too willing to give the dopes for the price.

There is scarcely any practitioner of experience that is not cognizant of such facts. True, recent laws have very much curtailed the sale of "dopes" by druggists, pharmacists, etc. But, unhappily, even some doctors take advantage of their professional rights to prescribe such things for themselves, and it is soon easy to see the effects. Some of the brightest minds of our profession have become affected by such habits, and it is not long before we hear of them as wrecks—mentally, physically and even morally. Secretive uses of such things soon lead to deceptions in other matters, and this may account for the perpetration of frauds in the various walks of life by those we once esteemed as high-minded, honorable and above suspicion.

If sufficient will power is not left to such victims to desist, it would be well if their remnant of means could enable their friends to put them under proper treatment in some one of the now numerous good institutions of the country especially adapted to the care of such cases.

The habitual user of alcoholics and "dopes" of various kinds oftentimes learns how he or she can get the article wanted by clandestine means; and the effect upon the home life becomes apparent and threatens the oncome of a degenerate race. Is there any wonder that the

strong arm of law is being invoked to stop or limit the scope of such habits?

In the practice of medicine, we recognize the need of many such articles as are to be condemned for social or habit uses—such as morphine, chloral, cocaine, chloroform, whiskey, etc. So we recognize the rightful uses of the surgeon's scalpel, but such instruments are not made for murders, suicides, etc.

There is much difference of opinion among physicians as to the true value of alcohol for medicinal purposes. Some regard it almost as a *sine qua non,* while, possibly, the majority of others believe its worth has been greatly over-estimated. There are, however, few physicians who do not feel that at times it is practically indispensable, and is necessary as the most suitable, or even as the best, remedy in a number of conditions. Hence the prohibition of their manufacture and their legitimate uses cannot be advocated. But laws should be adopted that will prove more stringent, and thus limit their illegitimate sale and uses. To enact laws that will be effective, and yet not entirely prohibitive, is the real problem of the day. It is not a question for extremists to handle, for "striving to better, oft we mar what's good." Like the lascivious kiss, the trial of a "dope" to see what its effects may be, is a step downward which, followed too far, will lead to ruin. *Avoid temptations.*

The Southern Surgical and Gynecological Association

Will hold its twenty-second annual session at Hot Springs Va., December 14-16, 1909, Dr. Stuart McGuire, presiding. As papers will be read by some of the most prominent professional men in the country, a most interesting program, as well as a pleasant time socially, is anticipated by those expecting to attend. Dr. Lewis C. Bosher, of Richmond, is chairman of the Committee of Arrangements.

Surgical Post-Graduate Course in Richmnod.

We call special attention to the advertisement of the post-graduate surgical course to be established in this city by Dr. J. Shelton Horsley and others. Classes to be limited to four each, and the term to four weeks for each class. The eminent ability of the teachers is well recognized by the profession, and much is to be gained by tuition under them in the specially practical courses designed.

Successful Treatment of Morphine, Cocaine and Alcohol Habits.

Dr. J. W. Williams, Richmond, Va., has made sufficient tests of the methods advocated by the Shanghai (China) Opium Congress, and published in *Journal American Medical Association,* to satisfy himself of their value, and now announces himself ready to receive patients who have become habitues.

Obituary Record.

Dr. Benjamin Robert Bryant,

After a brief illness, due to pernicious malaria, died at his home in Boykins, Va., November 14, 1909.

Dr. Bryant was born near Sunbeam, Va., in 1858. After graduating from V. P. I., Blacksburg, Va., in 1878, he entered the Baltimore College of Physicians and Surgeons, from which he received his doctor's degree in 1881. He then located at Koskoo, Va., at which place he practiced his profession and lived the life of a planter for about twenty years. In 1905, he retired from active practice and moved to Boykins. He represented Southampton county in the House of Delegates in 1904-1906, and was Democratic County Chairman for one term. Dr. Bryant was twice married, his second wife surviving him.

Dr. Bryant was popular, prominent and prosperous as a citizen as well as a practitioner of medicine.

Not Deserving of Recognition—"By the way," said the gentlemanly looking person in the black broadcloth suit, "if you mention my name in connection with the accident, you may say that 'Dr. Swankem was called and the fractured arm was suitably bandaged,' or something to that effect. Please spell the name correctly. Here's my card."

"Thanks," said the reporter, looking at the card. "You are next door to Dr. Rybold, I believe. Are you acquainted with him?"

"No sir," replied Dr. Swankem, stiffly. "We do not recognize Dr. Rybold as a member of the profession. He advertises."

THE
Virginia Medical Semi-Monthly.
(FORMERLY VIRGINIA MEDICAL MONTHLY.)

Vol. 14, No. 18. Whole No. 330. RICHMOND, VA., DECEMBER 24, 1909. $2.00 a Year. 10 Cents a Copy.

Original Communications.

ETIOLOGY, SYMPTOMATOLOGY AND PALLIATIVE TREATMENT OF HYPERTROPHIED PROSTATE.*

By JNO. S. NILES, M. D., Carbondale, Pa.

There is no dispute as to the necessity of prostatectomy. The exceptions prove the assertion. The value of the palliative treatment in certain cases is free from dispute. The veracity of these statements will be attested by those whose lives have been made comfortable and free from suffering.

It is not the object of this paper to belittle the brilliant results atttained by skillful prostatectomy, nor encourage the palliative treatment in proper surgical cases. The object is threefold:

First. By discussion, become more positive concerning the etiological factor, thus enlarge on the prophylactic attention and prevent or lessen the enlargement of this gland.

Second. By the discriminating observation of the earlier symptoms, pursue prophylactic measures earlier, thus retard urinary obstruction.

Third. Familiarizing our knowledge of palliative attention that we may obtain the greatest good from these methods.

While much good work has been accomplished by investigation, thorough and painstaking, technic improved possibly, we may, without serious loss of time, brain or brawn, contemplate the relief of those most unfortunate of our sex, who either from choice or condition demand the less radical measures and simultaneously strive to lessen the number of victims of senile hypertrophy. We have been fortified in our belief in these matters by the careful perusal of Dr. Bang's article in *The New York Medical Journal* of March of this year, in which he says:

"The first problem which naturally presents itself is the one of determining upon whom to operate. The general proposition that, if a patient has enlargement of the prostate, therefore, he must be operated upon, cannot be maintained. All the factors pertaining to the man's physical conditions, local and general, and to his social and economic status, must be analyzed; and a vague fear that unless he is immediately operated on some dangerous symptoms will appear in the future, must not be allowed to weigh in the argument. 'Sufficient unto the day is the evil thereof.' Nor, furthermore, is an attack of complete retention of urine necessarily an indication for immediate operation. There are cases still under my observation who, having had complete retention of urine, and having had urinary ability restored, are living comfortably without use of the catheter, excepting at long intervals, either for the purpose of re-examination, or preventive treatment. Many subjects of the malady will live to a ripe old age unimpeded by it, able to attend to the duties and pleasures of life without restriction and who may never require radical treatment. But such persons should clearly understand that without interfering with business, pleasure or travel, they are under observation, and that from time to time careful discrimination must be used as to their effectual bladder capacity, and as to whether or not their bladders have become infected.

"There are cases with small enlargement of the gland, and very little residual urine, but with spasmodic attacks of increaesd but not total retention of urine. This partial retention may become complete and may be caused by congestion of the prostate which not only temporarily augments the enlargement of the organ—thus further narrowing the urethra—but induces a hyperexcitability and tonic con-

*Read before Medical Society of State of Pennsylvania, at Philadelphia, September, 1909.

tracture of the sphincter muscle fibers. This congestion and hyperexcitability may be due to sexual stimulation, to reflexes from lesions in the penile and bulbous portions of the urethra and hemorrhoids or anal fissure, to alcoholics, to 'catching cold,' or to a combination of these causative factors. Such cases are sometimes misjudged and subjected to prostatectomy without (at least in my opinion) sufficient trial of simple measures calculated to reduce the congestion and restore the urinary function."

The palliative treatment comprises hygiene, dietetics, internal remedies, modern appliances and electricity. When I refer to these cases of advanced years without advanced kidney lesions, with pronounced emaciation, debility, whose declining years are few, extremely few, we at once realize that this subject is one for the medical man rather than the surgeon.

Then you can, without much stretch of the imagination, recall conditions where the surroundings and inclinations of the patient forbid operative interference. When you add to these conditions, many times, the long distance to a skillful operator, you must then become resourceful in comforting and alleviating this old man while life lasts. To remove successfully and skillfully with celerity, and without traumatism, the prostate requires no little skill. I agree, in the hands of Dr. Young, Dr. Horwitz, Dr. Martin, or a number of other skilled surgeons, it may be accomplished most satisfactorily; but the average man who does general surgery, and who is less frequently called upon to eliminate this gland, who has not reached such perfection of skill, it becomes a more difficult proposition. This, gentlemen, I can vouch for, not only from personal experience, but from personal observation. There are so many beautiful descriptions given in text-books of various operations, so much glibly said from the rostrum concerning the ease and facility with which operations may be performed, that we forget our experiences and fail to remember what we have seen attempted. Therefore, the larger experience in the practice of medicine and surgery, and observation of work, leads one to give greater consideration to the treatment of enlarged prostate.

The frequency of this pathologic condition, together with the inconvenience, and suffering, and emaciation, earnestly demands our most careful reflection. When we are told that 50 to 85 per cent. of male adults between the ages of 45 to 80 pay the penalty of their sex in this particular, when it is shown that the mortality is from 2 to 10 per cent., depending upon the operator and surroundings; when we consider that not more than 15 per cent. of the afflicted number yield to operation, it would appear that a discussion upon the cause and symptomatology and treatment is not amiss.

If, in our discussion, we to-day receive more definite ideas as to the cause of this condition, if we can possibly elicit some early symptoms, the knowledge of which might assist us to retard the progress of the growth; if, in the discussion, some new suggestion on the treatment that will relieve the agony and distress and emaciation of the afflicted, I am sure we will have accomplished that which will be remembered thankfully by the unfortunate prostatics.

The cause of hypertrophy is still unsettled. The French view of it that it is a senile process produced by arteriosclerosis has less followers than formerly. White and Martin offer as a "working hypothesis" that the function of the testes and ovary is two-fold:

The reproduction of species and the development and preservation of the secondary sexual characteristics of the individual. The need for exercise of this latter function ceases when full adult life is reached, but it is possible that the activity of the testes and ovary do not disappear coincidently, and that hypertrophies in closely allied organs like the prostate and the uterus are the result of this misdirected energy.

White and Martin also think there is another variety in which the prostate is excessively hard, which is probably due to fibroid degeneration following chronic inflammation. Long ago John Hunter advanced the theory that the enlargement was due to inflammatory origin entirely, which theory after lying dormant for years was again advanced in 1863 by Virchow and is now being ardently advocated by many able writers. It, at least, appears to account for the onset of this trouble, and for the many pathological changes in the gland. Unfortunately for those afflicted, the initial symptoms present themselves when the pathological condition of the gland has so far advanced that treatment is much less effective than it might have been had we been cognizant of the condi-

tions earlier. It is not the discomfort from tumefaction that attracts the attention of the patient, but the first signal of distress is a slight frequency in urination, particularly at night; with it there is often noticed a slight diminution in the force of the stream and some delay in starting of the flow. The advice of the physician is not sought for these earlier symptoms, but later, as they increase in severity, the urinations become more frequent, particularly at night, and the stream lessens, and is frequently interrupted, and much effort required to start the flow, and then the medical man is consulted.

Gradually the necessity to get up at night will become a serious annoyance. A few hours will be passed in slumber, but towards morning the frequent desire to urinate will make sleep impossible. Not infrequently an early symptom of congestion of the prostate is a definite "libido sexuales" with frequent and troublesome morning erections, approaching in some cases priapism. This condition may appear in old men who have ceased to lead an active sexual life for a long time. While true incontinence is rarely seen in the condition under consideration, yet constant dribbling is often present. It is not always due to the same cause. Complete retention may cause it, the nearly distended bladder simply overflows. As fast as the filled bladder receives the urine from the kidneys it passes out. Then again, the muscles of the bladder are sufficient and the incontinence is caused by paroxysmal contraction of it from irritation of the detrusor muscle.

Then we find effort required to void urine is peculiar to prostatics. There is a hesitancy in starting the stream; it is small and without force. When an effort is made to empty the bladder it rather occludes the passage than opens it. There is no satisfactory conclusion of the act of micturation.

A cardinal symptom invariably related to his class at the Jefferson Hospital by Professor Brinton, than whom there was none better as a concise lecturer, particularly on genito-urinary surgery, was the excruciating pain at the glans penis, which frequently awakens the sufferer, so severe that he springs from his bed clutching the penis and crying out in agony.

The diagnosis is not difficult; the picture is generally a typical one. The amount of emaciation depends upon the urinary infection, the kidney involvement, together with the loss of sleep, the loss of appetite, the nervous excitability and anxiety due to these conditions.

To the writer it appears that the portion of this paper that has given him the most serious consideration, and he hopes will demand the attention of his fellow-practitioners present, is the prophylactic treatment. The attitude he takes is that prophylaxis should begin before the diseased condition exists, that preventive measures are the ones that are most effectual; that the inflammatory theory of the cause of enlarged prostate is the most feasible one. He contends that this acute stage of inflammation in the gland occurs in young manhood when sexual appetite is the strongest and when moral restraint is less active. It is then that prophylactic treatment should be given. It should begin by instruction from the family physician and by the parents; as important as the instruction to the young maiden entering womanhood concerning her menstrual periods, so is the advice to be given to the young man concerning sexual habits and impure thoughts. This instruction should not be terminated at early manhood.

In a prostatic it is of first importance that his general health should be carefully guarded, for the slightest "cold," or constipation, or indiscretion in diet, or alcoholic beverages cause, or may cause, acute congestion of the already engorged gland and thus produce complete obstruction. The diet should be regulated, avoiding excess of acids, meats, highly seasoned foods. In fact, let the dietary be so arranged that the digestion and assimilation be as nearly perfect as possible and the urine the least irritating. Each patient will be a law unto himself, not only concerning food, drink and tobacco, but clothing and exercise and bathing. Atmospheric changes should demand changes in clothing, at all times sufficient to avoid being chilled. Moderate exercise is to be enjoined. Excessive labor, mental strain or nervous excitement are to be interdicted. Walking, driving, all forms of gymnastics may be advised. While sufficient rest is important, yet it is not productive of the best good to encourage too long sleeping hours. A cold morning bath, followed by brisk rubbing, until the skin is all aglow is advised. At bedtime a hot bath, augmented by a hot-water enema, may relieve

many symptoms which may be causing pain or annoyance.

When prophylactic treatment has been omitted and the efficacy of hygienic attention exhausted, the question of the use of the catheter will arise. The bladder has gradually failed to empty itself, its tonicity lessened until the residual urine reaches two to three ounces. To determine just when instrumentation should begin institutes an important consideration. If the urine be still free from infection, the kidneys functionating normally, the introduction of the catheter adds a probable element of menace. However, with the residual urine increasing in quantity, the bladder muscle weakening, and the urine ammoniacal, the complete emptying of the bladder by catheterization and irrigation of it with a nitrate of silver solution is oftentimes advised. If circumstances necessitates the patient to perform this operation most explicit directions should be given, and insisted upon, for with all the precaution, it is a procedure attended not infrequently with dire results. Aseptic precautions observed, the urethra and bladder require a careful introduction to this work. The patient should be requested to be in bed for the first few times.

Massage of the prostate has been suggested by some authors. Gently stroking the gland, with the finger in the anus, two or three times per week to empty the vesiculæ seminales, it is claimed, will lessen the size. The filling of the bladder with water at a temperature from 100 to 105 or 110, injected in the meatus, forces its way through the sphincter, until the bladder is fairly well filled, and then it empties itself. The benefit derived from this is probably from the reduction of the congestion of the bladder and gland from the use of the hot water. When it becomes necessary to use mechanical means to irrigate the bladder, as well as get rid of the residual urine, Harrison recommends the passing through the perineum a straight trocar and canula. The finger is inserted in the rectum as a guide in passing the trocar. After the trocar is withdrawn a self-retaining catheter is inserted through the canula and left in after the canula is withdrawn. The bladder may be irrigated daily, or twice daily, through this catheter. What, to me, is a vast improvement on this instrument is the one made by Dr. Rodman.

It consists of a curved canula four and one-half to five inches long and about as large as the little finger. To the canula is attached a rubber tubing and bag, into which the urine passes quickly from the bladder, going by siphonage. You can readily see the trocar is introduced through the incision made above the pubis down to the muscles and then with this instrument the trocar and canula are entered to the bladder.

This simple piece of mechanical ingenuity would appeal to me as a most desirable alternative. It is a perfectly safe way of draining the bladder, and, furthermore, might save the convalescence in bed, which is so often fatal to old men. It also does away with the necessity for general anesthetic, which is an added danger to a man of this class who has damaged kidneys.

Personally, I have had no experience with these appliances, but shall take advantage of the first opportunity, practically demonstrating their efficiency. I can add, however, that the author of this instrument, Dr. Rodman, has given it a thorough trial and speaks most highly of the results he obtains.

The Morton wave current is a recent addition to our treatment of this troublesome affection and has in the hands of some men given them satisfactory results.

Dr. Jackson, who has had some little experience with this method, says in a paper on this subject that "since the distressing symptoms of prostatic hypertrophy are all produced primarily by pressure upon and narrowing of the urethra any method of treatment which will materially reduce the size of the gland should have just consideration before surgery is resorted to."

The Morton wave current, which is applied through the rectum by means of a metal electrode held directly against the gland, produces contraction of the muscular fibers of the gland, urethra and bladder, thereby squeezing out any secretion from the acini, removing the passive congestion and stimulating the musculature and exchanges a passive congestion for an active hyperemia. This treatment, which is given at first every second day for twenty minutes, produces frequently by its rhythmical contraction and relaxation of the tissues, marked diminution in the size of the gland, as

evidenced by more nearly normal urinary function after the second or third treatment.

The action of this current has been described by Dr. Snow as follows: The alternate contractions and relaxations cause an increased activity of metabolic processes. The contractions compress the blood vessels and thereby force out the infiltrate through the lmyphatics and blood channels at the same time, increasing the functional activity of the cells, promoting the absorption of round cells and other inflammatory products.

Not every case of prostatic hypertrophy is amenable to electrical treatment, as one can readily see by referring to the pathology. No amount of treatment will remove fibrous tissue, but since from 80 to 85 per cent. of these cases are adenomatous, they should all be relieved by this method. During the last year only one of the cases under observation was not relieved after five treatments. All others of this series were entirely relieved—some after three treatments. These cases were nearly all in men over 60 years of age, some of long standing. One patient had been a sufferer for twenty-six years. Fifteen treatments entirely cured him, and he has had no return of his symptoms for a year. This patient had a cystitis, which gave him considerable pain, besides the other symptoms which always accompany this trouble. He is now able to sleep the entire night, and says he is completely cured.

From the foregoing it will seem that the advantages of this method of treatment are many, and, so far as I know, have no contra-indications. The quickest, of course, will be attained where electrical treatment is instituted early, especially before the parenchymatous tissue is replaced by fibrous tissue, even though the evidence induced indicates that this is not usually the case. Patients will submit to this treatment where they will not consent to an operation, and even though a prostatectomy should eventually become necessary, the general tonic, as well as the local effect of static electricity will have better fitted them for operation.

Permit me, in conclusion, to offer as a summary the following:

First—Inflammatory theory as the origin of hypertrophy of the prostate as the one most feasible.

Second—That prophylactic treatment may, in certain cases, be successfully used to prevent an acute engorgement of the prostate and thus prohibit permanent retention of urine.

Third—That not a few cases may be best treated by mechanical means.

PELLAGRA—ITS ETIOLOGY, PATHOLOGY, DIAGNOSIS AND TREATMENT.*

By C. W. G. ROHRER, M. D., Baltimore, Md.
Medical Assistant to the State Board of Health of Maryland, etc.

Definition. Pellagra is a specific infectious disease, due to a parasitic fungus—namely, the *Aspergillus fumigatus.* Locally pellagra is characterized by an erythematous, desquamative inflammation of the skin; and, generally, the disease is characterized by the formation of tumor-like masses or granulomata in various parts of the body. Constitutionally, the disease is complicated by digestive and neurotic derangement.

The disease may be either acute or chronic. A majority of the cases, however, are of chronic duration.

In the State of Maryland but three cases—two by Dr. William S. Thayer, of the Johns Hopkins University, and one by the present writer—have been reported up to the present time.

Classification. Pellagra should be classified along with tubercle, lupus, syphillis, glanders and farcy, leprosy, actinomycosis and rhinoscleroma, as one of the infective granulomata. The abundant presence of tumor-like bodies, especially in the kidneys, lungs, brain, stomach, intestines and spleen, makes the present writer feel justified in vouchsafing this assertion. The superficial portions of the lungs and brain, especially the walls of the blood vessels, show them most abundantly. These small, nodular lesions, when examined by the microscope, resemble very closely a tubercle with the giant cells removed from its centre, or a syphilitic gumma with the giant cells eliminated from its periphery.

Occurrence in Animals. Recently M. Müller, in *The Journal of Comparative Pathology and Therapeutics*, described several outbreaks of an enzoötic character occurring in lower Alsace-Lorraine, and affecting horses, cattle and sheep. The disease, it is stated, was

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caused by feeding with musty fodder. The principal symptoms consisted in myopathic paresis or paralysis, and in the oxen and sheep in excessive salivation. The pulse and respirations were only increased in old-standing cases. There was no fever and the sensorium did not appear to be affected. Occasionally animals recovered after a very long period of convalescence.

The so-called "cornstalk disease," prevalent among cattle in the West, is probably allied to pellagra. "Blind staggers," and many doubtful cases of cerebro-spinal meningitis in horses, are believed by the writer to be due to pellagra.

The disease has been produced experimentally in dogs and in chickens.

Etiology. The causes of pellagra are predisposing and exciting. The principal predisposing cause is the eating of improperly cured maize or Indian corn. Chronic diarrheal disorders, especially of an ulcerative type, have also been recently advanced as possible predisposing causes. Impure drinking water, it is alleged, may bring about these intestinal lesions, and thus open up avenues of entrance for infection with pellagra.

The use of corn products as a predisposing cause was well established in the fatal case which the writer lately studied. After the disease had become plainly evident, the patient stated that she could no longer eat corn-bread, because it "went right through her." As no ulcers were found at autopsy in either the stomach or in the intestines, the writer believes their presence to be accidental or due to other causes.

The exciting cause of pellagra was formerly believed to be a parasitic fungus, *sporisorium maidis,* which produced a diseased condition of Indian corn. To-day it is pretty generally conceded that pellagra is caused by the *aspergillus fumigatus.* Some of the fall cases may be due to the *aspergillus flavescens.*

Several observers have found bacteria in the circulating blood of pellagrous patients, and ascribed to them a possible etiological significance. During life no bacteria were found in the circulating blood of the one fatal case recently studied by the writer.

After death numerous bacterial emboli were found in the various viscera and organs, notably in the liver and in the lungs. These bacteria were looked upon as secondary invaders, and not as causative factors.

According to observations made by the writer, the *aspergillus fumigatus* grows not only upon corn, but also upon peas, beans and other podded or leguminous plants. It also grows upon buckwheat beaten to the ground by heavy rainstorms.

During a wet season leguminous plants, such as peas and beans, are liable to rest upon the damp ground and thus form a nidus, or hotbed, for the growth of the *aspergillus fumigatus.* Buckwheat is sometimes similarly affected. An ear of corn, however, is the most frequent habitat of the now conspicuous *aspergillus fumigatus.* The warmth and moisture generated by an ear of corn during an unusually wet season or within the husk of an ear of corn harvested a little too green, furnish ideal conditions for the propagation and growth of the *aspergillus fumigatus.*

Another factor hitherto overlooked in the causation of pellagra is the harvesting of corn by machinery. The writer believes the corn harvester has had much to do with the fairly wide prevalence of pellagra in recent years. To this new departure in agricultural methods should be attributed at least two-thirds of the cases of pellagra. The "corn harvester," therefore, can be classified as one of the "predisposing causes" of pellagra.

Corn cut with a harvester is usually bound tightly into small bundles, and hence cannot properly dry and cure. Occasionally it lies upon the damp ground several days before it is placed in the shock. Harvested while damp or a little too green also helps engender conditions favorable for the growth of the *aaspergillus fumigatus.*

Corn harvested in the old way by hand is not bound into bundles, and is placed more loosely in the shock. The atmospheric air, as well as the heat and light of the sun, have free access to the ripening ears of corn, and as a rule they cure properly.

Pathology. As has already been stated, the writer believes that pellagra should be classified with the infective granulomata. When examined by the microscope these small tumor-like nodules or granulomata are seen to be composed of a necrotic centre surrounded by spindle-shaped cells and small round cells, very much like a tubercle or a gumma minus giant cells.

These granulomata are most abundant in the walls of the superficial blood vessels of the lungs, especially those of the upper lobe of the right lung. Next to the lungs rank the superficial blood vessels of the brain, thus furnishing a pathological basis for the distressing mental symptoms apparent in the last stages of the disease. Granulomata are also found in the stomach, intestines, spleen, kidney and uterus.

Another feature is the intense congestion noticeable in practically all the tissues and organs. An extreme degree of gastroptosis and enteroptosis was also pointed out at the autopsy. The liver showed chronic passive congestion, with numerous bacterial emboli in its smaller vessels. The stomach at its lower fourth is encircled by many varicose veins. Attached to several of these veins is a polypoid growth. The kidneys contain several small cysts, and show a condition of chronic diffuse nephritis. Numerous necrotic areas are also seen. The cortex is narrow, measuring but one-eighth of an inch. Numerous granulomatous masses are found in the walls of the uterus. There is a mucopurulent discharge from the internal os. The fundus of the uterus is filled with blood and pus. Hence it would seem that the toxic products elaborated during the growth of the *aspergillus fumigatus* have a special predilection for the female uterus similarly to those generated by the fungus causing ergot of rye—namely, *claviceps purpurea.* The heart weighed but five and one-half ounces and its interior was filled with white clot. The proportion of the weight of the heart to the weight of the body was as 1 to 233, the patient having been reduced to eighty pounds in weight. The heart also showed the condition known to the Germans as "drop heart." With the exception of slight degeneration of the posterior columns of the cervical portion, the spinal cord shows no conspicuous change. The blood vessels of the brain contain numerous granuloma-like masses. The brain weighed nearly forty-four ounces. The skin shows degeneration of its epidermic layers. The deeper of these have been transformed into keratin; the superficial layers have become gangrenous. The cutis vera or true skin shows little or no involvement.

Diagnosis. The diagnosis of pellagra rests upon the history of the case and the characteristic symptomatology. The one fatal case which eventally came under my observation had suffered many diagnoses and much treatment, all, however, of no avail. The last diagnosis made before my advent into the case was "chronic eczema."

A history of the use of corn products as a staple article of diet is very suggestive. My fatal case, as her family informed me, had eaten corn bread every day of her life, both summer and winter.

The characteristic triad of symptoms are:

1. Gastro-intestinal.
2. Erythematous.
3. Nervous.

The gastro-intestinal derangement is usually the initial symptom of pellagra. Dyspepsia, diarrhea, and stomatitis are the cardinal symptoms referable to the alimentary canal. My patient had complained greatly of her stomach for three or four years prior to the appearance of the skin lesions. She always drank hot water before meals—the conventional "hot water cure for dyspepsia." About the same time she had to desist from eating corn bread, owing to an obstinate diarrhea which it caused.

In my patient the skin symptoms began with unfailing regularity toward the last of April. The skin lesions were first apparent in April, 1907. They began as "small, broad, scattered bumps." The patient and family thought it was poison oak. One of the neighbors also diagnosed it as such, and prescribed a soda-water wash; later, she prescribed local applications of hog's lard. The skin lesions first appeared on the dorsal surfaces of both wrists. About a week afterwards these areas "turned red as flannel." From the wrists the erythema extended to the backs of the hands and fingers. About two weeks after the disease had become apparent upon the wrists the feet were affected. The dorsal surfaces of both feet were first attacked, and then the ankles. Red spots also appeared upon both knees. Several days before the feet became affected, the classical red band appeared upon the forehead. The erythema, characterized by its fiery redness, always appeared toward the end of April, and lasted from three to four weeks. At the expiration of that time it disappeared entirely.

The second attack, occurring in April, 1908, was more severe and prolonged. The erythema again entirely disappeared in about four or five weeks. In April of the present year (1909)

the disease recurred for a third time. This, third and last, attack was more severe than either of the others. The erythema faded slightly, but symmetrical gangrene of both feet resulted. She grew gradually worse, and died August 20, 1909. The nervous symptoms were not markedly manifest until a few weeks prior to death. She was delirious at times, and always thought somebody was going to kill her. My patient did not have any convulsions, but at times was in a stupor. She suffered but little pain. The skin from the diseased areas could be cut or torn without entailing any suffering. She was very sensitive, however, to heat and cold. For about a year and a half—so the members of her family stated— she was getting thin in flesh, hollow eyed and of a swarthy complexion.

Treatment. The treatment of pellagra, like that of other infectious diseases, may be either prophylactic or curative. Prophylaxis, however, is the more important. Right here, and in the following words, I wish to sound the keynote of this conference—*upon proper prophylactic measures depends the suppression of pellagra.*

The essential prophylactic step can be summed up in the one terse sentence—discontinue the use of spoiled maize or Indian corn. It was better, perhaps, to institute measures to prevent corn from becoming musty or spoiled. The proper curing of corn is a *sine qua non* in the prevention of pellagra. This can scarcely be hoped where corn is cut by machinery. Leguminous plants and buckwheat which have lain upon the damp ground should not be used for human food.

The curative or medical treatment of pellagra is notoriously unsatisfactory. In brief, it is a feeble attempt to combat the symptoms as they arise. The question of diet is all-important. Avoidance of the suspected cereal and the substitution of other good, easily assimilable articles of food is the one thing needful. Among drugs ferruginous tonics and arsenical preparations are indicated. The stock diarrheal mixtures are advocated for the gastro-intestinal irritation. Opiates may be called for, if the tenesmus be great.

My patient received one-half ounce of whiskey and one-fortieth of a grain of strychnia sulphate every four hours. Her appetite was poor, and about the only thing she relished was ice cream. Five-minim doses of atoxyl were given hypodermically every four hours, but without any appreciable results.

Dr. William S. Thayer, of the Johns Hopkins University, apparently cured one of his cases of pellagra by the use of thyroid extract. He gave three 2-grain doses of desiccated thyroids a day for several weeks, and then decreased the dose to four or five grains daily, continuing the same for several months.

SUMMARY AND CONCLUSIONS.

1. But three cases of pellagra have been reported in Maryland up to the present time. Two of these were reported by Dr. Thayer and the third by this writer. Thanks are due my able chief, Dr. Marshall Langton Price, Secretary of the State Board of Health of Maryland, for an opportunity to study the prevalence of pellagra in Maryland.

2. Pellagra is an infectious disease, produced by the *aspergillus fumigatus.* The *aspergillus fumigatus* is not very tenacious of life. Not infrequently it is overgrown by the common blue-green mould (penicilium crustaceum), or more or less frequently it is overgrown by the common white cotton mold (Mucor mucedo); hence the confusion in regard to the etiological factor. The *aspergillus avescens,* to which the so-called fall cases of pellagra are attributed, is probably a slightly modified *aspergillus fumigatus.*

3. Personally, I believe the appellation "fall attack of pellagra" to be misnomer. It is merely a recrudescence. In the summer there is a temporary abatement of the symptoms, due to the use of fresh vegetables and fruits. Upon the resumption of dry foods in the fall of the year there is a flaring up of the spring attack.

4. Pathologically, pellagra should be classified with the infective granulomata.

5. The following is additional evidence that pellagra is due to a fungus: The skin lesions in pellagra are similar to those produced by an allied fungus —namely, *claviceps purpurea,* the organism which excites the growth of ergot of rye.

6. It was definitely proven that musty corn was the cause of my fatal case of pellagra. To prevent pellagra, corn meal should be made from properly cured corn. Also avoid eating leguminous foods (peas and beans) and buck-

wheat, the pods of which have lain on the damp ground. The *aspergillus fumigatus* sometimes grows upon these articles of food, but the role which they play in the causation of pellagra is a minor one.

7. Meteorological conditions, especially in the great corn belt, have much to do with the prevalence of pellagra. Many cases are apt to follow a wet season, while comparatively few will develop after a dry season. A wet season furnishes ideal conditions for the growth of the *aspergillus fumigatus.* The past season has been a remarkably dry one; hence we need not expect a new outbreak of pellagra for some time to come.

8. The harvesting of corn by machinery—that is, the use of the corn harvester, sometimes called the corn binder—is responsible for the alarming prevalence of pellagra in recent years. The corn is bound into bundles and cannot ripen or mature properly, owing to exclusion of the air and sun; a favorable environment is thus afforded for the growth of the *aspergillus fumigatus.*

10 *South Street.*

STERILIZATION OF HABITUAL CRIMINALS.*

By CHARLES V. CARRINGTON, M. D., Richmond, Va.
Surgeon to the Virginia State Penitentiary, etc.

The proposition of the sterilization of habitual criminals, as a prevention of crime, is so new to most of us that the novelty of the suggestion will, I hope, engage your thoughtful attention. Then the positive merit of the enforcement of the suggestion, by law, will, I think, so appeal to you all that in the near future I will have your assistance, individually and collectively, as the Medical Society of Virginia, when I endeavor to secure the passage of a law by our next Legislature that will require the sterilization of certain classes of our criminals. I have the rough draft of such a law now, but it is such a new subject, this sterilization of a man, criminal or otherwise, and is so hedged about with foolish sentiment and ideas of cruel and unusual punishment, that I admit it will be up-hill work to educate the average legislator to the full knowledge that no single measure for the prevention of crime would be more far-reaching in its deterrent effects, first, and preventive effects, second, than a law which provided for the sterilization of certain classes of criminals. Stop the breed is the whole proposition.

One of our oldest proverbs is, "An ounce of prevention is worth a pound of cure," and this may be taken as the text for my paper. Prevention is the cry of the age—or to put it better, of the ages.

Jenner, with vaccination, was one of our greatest and earliest preventors of a loathsome disease. We have to-day anti-vaccination societies, made up of the uneducated and hypersensitive, cruel, and unusual punishment talkers. And were we to wander into the realms of serum-therapy, with the antitoxine for diphtheria, tetanus, meningitis, hydrophobia, and tuberculosis, we could more than take up the time allotted for this paper. The medical mind of this generation, as well as that of previous generations, is centered on the great basic proposition of prevention.

Four States in the Union—Indiana, Connecticut, California, and Utah—have passed laws requiring that certain classes of criminals shall be sterilized. Indiana has had such a law for several years, and has sterilized several hundred. Utah has only very recently passed the sterilization law.

Such a law is bound to come in Virginia. Texas and several other Southern States have earnest and thoughtful men giving their time and efforts to the securing of the passage of a sterilization law for habitual criminals, believing, as I do, that fifteen or twenty years after the enactment and enforcement of such a law our criminal class will be immensely decreased.

About a year ago I read a short paper on the subject of sterilization before the National Prison Association, then meeting in Richmond. That little paper provoked an immense amount of discussion and correspondence. One dear old lady who has taken a keen interest in prison work for years, and is a deep thinker and good worker, came to me after the close of my paper and said: "I don't suppose I ought to speak to you on the subject of your paper, but I am old enough to speak my mind, and if all of 'em (meaning habitual criminals) were treated as you recommend, it would do an immense amount of good, and save a lot of crime and meanness"; and the old lady was dead right.

*Read during the fortieth annual session of the Medical Society of Virginia, held at Roanoke, October 5-8, 1909.

I have been surgeon to the penitentiary for over ten years, a long enough time to see father and then sons come to the prison, and by looking back over the records I learned that the grandfather had also been an inmate. Now this hideous reproduction of criminals, from father to son and to grandson, should be stopped; it is right and proper that it should be, and it will be in time—in a very short time, too—if you doctors of Virginia will awaken to the importance of this proposition as a crime preventer, and tell your Representatives in the House and Senate that from a medical and surgical standpoint it is a good measure.

A good doctor has enormous weight in discussing such a subject with a thinking member of the Legislature, and when you sift the whole matter out the talk of cruel and unusual punishment does not amount to anything. I mention this, because this is the single argument I have heard urged against the measure, and such an argument can only have force from a sentimental standpoint.

The criminal has by reason of his acts forfeited the rights of citizenship, and as a further punishment he is sent to the penitentiary at hard labor, etc., and as a still further punishment, if he is a rapist, murderer, burglar, or guilty of arson or train-wrecking, he should be prevented from reproducing his species. That especial breed should be stopped.

I am not discussing here in this paper what criminals should or should not be sterilized. Of course, a law that provided for sterilization should be most carefully drawn, and only habitual criminals, third termers, and those guilty or heinous and revolting crimes, degenerates and such like, should come within the purview of the law.

Sterilization is a very slight operation; you simply resect the vas deferens, and it is generally done with cocaine anesthesia. A small nick is made through the skin of the scrotum, near the pubes, and after an assistant has forced the vas, with the accompanying vessels into the line of the cut, pick up the vas with forceps, resect it, tying off each end, then close the wound; one stitch generally suffices, and apply a collodion dressing. Your patient can usually go to work the next day. I have only sterilized four convicts during the time I've been surgeon to the Virginia penitentiary. The first one has given splendid and convincingly good results from the operation. He was a negro sent to the penitentiary for murder, with a long sentence. He had only been at the prison a short time when he was adjudged to be insane, and was sent to the asylum at Petersburg. While there he is said to have killed a fellow inmate and seriously injured a nurse. Later he was returned to the penitentiary as cured; had a relapse and was bandied back and forth between the asylum and the prison several times, as he became better or worse. Finally he escaped from the asylum, and when recaptured was returned to the penitentiary.

Just at that time the Legislature passed a bill requiring the insane criminals to be kept at the prison instead of sending them to the asylums.

This poor creature was most dangerously homicidal, and was the wildest, fiercest, most consistent masturbator I have ever seen. I sterilized him. That was six years ago. Improvement with him was reasonably rapid, both physically and mentally, and now he is a sleek, fat, docile, intelligent fellow—a trusty about the yard—cured by sterilization.

The second case was a debased little negro, a degenerate with a vicious record in the reformatory, and a heinous record at the penitentiary, as a masturbator and sodomist. Sterilization about four years ago cured him of his vicious, debasing habits, and he is now a strapping, healthy-looking young buck, and when he completes his sentence and leaves he cannot reproduce his species.

The third and fourth cases are of too recent date since their operation to report exact results; both of them were insane, debilitated masturbators; they had been under observation and treatment for months. Finally last month I sterilized them. They are greatly improved already, both mentally and physically, and they will be cured in time.

This is probably the first paper on this subject ever read before this society. I have wished to make it short and forceful, and I hope the statement of facts will carry conviction to your minds, and make you advocates of a proper sterilization law before our next Legislature.

932 *Park Avenue.*

CLINICAL ASPECT OF ENLARGED TONSILS—RESUME OF EIGHT HUNDRED AND FIFTY OPERATIONS.

By J. J. RICHARDSON, M. D., Washington, D. C.

The throat specialist has constantly to deal with enlarged and chronically diseased tonsils. Too much consideration cannot be given the subject, notwithstanding the fact it may appeal to some as an old and somewhat threadworn one. The data on which this paper is based is derived from a personal experience with a large number of these cases, including eight hundred and fifty operative ones. That the lives of many children are indirectly sacrificed by the presence of hypertrophied tonsils cannot be questioned. If the truth were known the number would be great beyond conception. The glands themelves belong to the lmyphatic tissue, which so frequently is the seat of morbid processes, especially in the early periods of life. In no part of the body, perhaps, is this curious tissue so often the seat of disease as in the masses situated in the fauces and designated the faucial tonsils.

Etiology.—The increase in the size of the tonsils cannot be said to be dependent upon any one factor. It is, however, a condition observed more often in children with an inherited strumous diathesis or in those with some constitutional dyscrasia. The writer has time and again observed instances illustrating this fact where several members of the same family were afflicted with hypertrophy of the glands. Gouty or uric acid diathesis is one of the causes and it acts by setting up in the tonsils acute and chronic inflammatory processes. In children there is frequently associated with enlarge tonsils hypertrophied turbinates, adenoid tissue in the pharyngeal vault or hypertrophy of the lingual tonsils. They usually are of a low grade inflammatory origin, but may be non-inflammatory, as occurs in enlargement of all lymphatic glands. Some cases are undoubtedly congenital. Permanent enlargement frequently follows acute infectious diseases of childhood, such as scarlet fever, measles, diphtheria and whooping cough. Study the etiology as carefully as we may, however, it can be frankly stated that the majority of cases cannot be attributed to any special assignable cause.

Age.—While it is practically a malady of childhood and early adult life it is met with not infrequently in those beyond thirty. The extremes in age of those whom we have operated upon was a child nine months with inherited specific disease and a man of sixty-five. The largest number of cases occur between ten and twenty years.

Sex.—Sex does not appear to exert any predisposing cause and the condition is seen in children of both sexes about equally, although in my list of cases the males were slightly in excess. After the thirtieth year there is a tendency to undergo partial and at times complete atrophy.

Climate.—Climatic conditions which predispose colds and local inflammations undoubtedly are etiologic factors not to be overlooked.

Clinically we meet with different varieties of hypertrophy. There are the hard or scirrhous forms, in which the connective tissue of the gland is enormously increased. They are very firm to the touch and appear as ovoid or round projecting bodies in the fauces. As a rule they are localized or compact, but may be elongated and present a smooth or corrugated surface; others present a divided appearance and consist of distinct capsulated lobes which have been designated supernumerary tonsils. We have met with such cases where the glands were divided into distinct masses requiring separate removal. There is a soft or adenoid variety met with in which there is an entirely different pathologic change from the condition in the scirrhous form. Little or no increase in the stroma will be found. The crypts are patulous and more or less filled with foul-smelling, cheesy secretion. A third variety occurring is the so-called ragged tonsil, the result of frequent abscesses and where they have caused a sloughing away of a portion of the glandular masses.

All the cases for convenience of consideration may be divided into three groups:

1. Those in which the tonsils are nearly or quite in contact.

2. Those in which they project not more than one-fourth inch beyond the faucial pillars.

3. Intermediate cases.

Symptoms.—The symptoms observed and elicited are numerous and varied. They are frequently so pronounced that a diagnosis may be correctly made from the patient's countenance and the tone of the voice. They rarely,

however, are the symptoms of the tonsils alone, but due to the combined symptoms of the tonsils, enlarged turbinates and all the glandular mass of Waldeyer's ring. All the symptoms depend in a great measure upon the mechanical obstructive effects upon the respiratory function.

Voice.—The voice will be thick and the patient will speak indistinctly. It will have a so-called nasal twang if the enlargement is excessive and lacking in resonance. The pharynx is one of the vocal resonaters and any structural alteration in it or the cavities in direct connection will alter the tones. Tone quality is perhaps more under the influence of the lower pharynx than any part of the so-called up-breathing tract, so that enlarged tonsils will inevitably impair the fullness and richness of the voice. In addition there are situated above the tonsils resonating chambers or spaces and the hypertrophy will prevent the tone waves from reaching them, thus interfering with the vocal resonance and timbre. These are not the only baneful influences which they exert. They usually cause a relaxed soft palate, which cripples its function, more or less, with consequent mispronunciation—particularly of consonants. Lastly the catarrhal inflammation usually accompanying the chronic hypertrophy has a deleterious influence upon the laryngeal mucous membrane. The process of respiration in enlarged tonsils is never normal—the entrance of air from the nose into the pharynx being seriously obstructed and the pharyngeal space greatly narrowed. The patients become mouth breathers with the usual serious consequences. They come to us with a history of difficult breathing, particularly during sleep, when their mouth would be widely opened, respiration noisy and interrupted. Snoring is often pronounced with restlessness, tossing about in the bed, incessant dreaming and frequent talking in the sleep. Another nocturnal condition met with at times is alarming to those in attendance and consists of sudden and severe attacks of dyspnœa, which threatens suffocation. The evil effects produced by tonsillar hypertrophy are identical with the condition observed in healthy persons sleeping in close and badly ventilated apartments. They will awake in the morning from disturbed slumber with a dull, tired feeling, often headache, dry throat, fœtid breath and impaired appetite. The condition is a typical one calling for fresh air. The nasal respiratory function being impaired and the physiological process of the air passing through the chambers and being warmed, moistened and filtered, will not be perfectly performed and in consequence the lower respiratory passages will be subjected to the danger from cold and the inhalation of foreign matter with their deleterious effects. The tonsils themselves very frequently become the seat of acute morbid processes owing to the unphysiologic breathing. In all these cases an interesting phase or observation is the influence which the enlarged glands exert upon the development of the nose itself. Asymmetry, distortion and impaired function have all been observed and can be readily accounted for when we have in mind the pathology of the disease and accepted physiologic laws. For instance, experiments have demonstrated that in a growing animal occlusion of one nostril is followed by impaired or lack of development on the occluded side. Deformities of the bony structure of the nose so frequently met with are undoubtedly often the result of enlarged tonsils in early life interfering with nasal breathing. Persistent obstruction to respiration, incident to the presence of enlarged tonsils and accompanying excessive secretions, is responsible for serious changes in the thoracic parietes, notably the condition known as "pigeon breast." Every observing pediatrist will bear me out in the statement that all children afflicted with large tonsils succumb more easily to acute diseases, and particularly to those affecting the organ of respiration.

Hearing.—Many cases of defective hearing are dependent upon enlarged tonsils and complete restoration of the impaired function of the special sense often follow their excision. The importance of bearing this fact in mind cannot be over-estimated. They exert their pernicious effects by producing an undue patency of the Eustachian orifice and by maintaining a catarrhal inflammation of the oro-pharynx and tubes with a general inflammation and thickening. The result is imperfect aural ventilation and tympanic retraction. The tonsils have a peculiar and complex innervation which accounts for some of the interesting nervous phenomena that have been observed to disappear promptly after their excision. Among the most striking of this class are those

of adductor laryngeal spasm. Most of them are met with in children, although I recall a couple of instances where they occurred in adults and were cured by the removal of the pathological lesions in the fauces. The symptoms in these cases are most alarming, and in searching for an exciting cause the tonsils should not be overlooked. Chorea is another disease of this class, which at times can be traced to reflex irritation from diseased tonsils. I have notes of two cases which took a sudden turn for the better after the removal of the tonsils and went on to complete recovery. There was no question as to the influence which the operation exerted in these cases and many similar instances have been reported in the experience of others.

Cough.—Incessant coughing may be due to reflex irritation from the tonsil in children and young adults. The cough from this part has certain characteristics more or less definite. It is usually abrupt, spasmodic, violent and sometimes agonizing. Other reflexes are excited by it, such as the secretion of tears. There is absence of expectoration and an important diagnostic factor to bear in mind is that it can be excited by titillation and allayed temporarily by the application of a local anæsthetic. A striking example of a case of this character has recently been noted. It was that of a child three years of age who had been coughing incessantly for weeks. No cough mixtures afforded any relief. The only source of irritation discoverable was moderately enlarged tonsils. They were removed, the cough promptly subsided and there has been no tendency to recurrence in the four weeks which have elapsed since the operation. It is interesting to note that the tonsillar lympathic vessels drain into the deep cervical chain, then into the thoracic glands and finally into the thoracic duct. It can be readily seen that by this route infection can be carried from the tonsils under certain conditions to all parts of the body. That they are the portals of infection in tuberculosis frequently is generally admitted. We have observed in scores of instances enlarged cervical glands disappear after the excision of enlarged and infected tonsils. An interesting instance came under our observation within the past month where there was a rather extensive cervical adenitis with every indication of early suppuration. The right tonsil was enlarged, honeycombed and the crypts filled with all sorts of debris. A complete operation by dissection was performed with the result of prompt subsidence of the adenitis without suppuration. This is the only instance where I have operated during an acute attack.

Diagnosis.—The diagnosis of hypertrophy seldom presents any points of difficulty, as any enlargement will be easily recognized upon direct inspection. It is important to recognize the existence of a hypertrophic process as a very moderate amount, especially in adults, may be the source of considerable annoyance. The fauces should be inspected when at complete rest, as in the act of retching they often are thrown forward to such an extent that moderately enlarged ones will appear as if they were almost in apposition. Where there is unilateral enlargement in adult life, it should be investigated with the greatest care. If the patient is beyond the middle period of life, the possibility of malignancy must not be overlooked. In early stages a malignant tonsil may present no appearance other than simple hypertrophy. A case of great prominence of one tonsil in a patient of sixty presented itself to me at one time; and as there was considerable hyperæmia about the region and some pain, my first thought was carcinoma or sarcoma. Exploration, however, revealed the presence of a calculus of stony hardness the size of a marble deeply imbedded and which required the tonsil to be slit wide open to permit of its removal. It occurred in a female who had been rheumatic most of her life.

Prognosis.—I have seen no untoward result in 850 operations, barring a half a dozen cases of profuse, but not especially serious hemorrhages—one case of severe cervical cellulitis, one of suppurative otitis, and a few cases of subacute otitis media. On the other hand, it is the rule after excision for the general health to be improved and the elimination of acute attacks of tonsillitis and septic inflammation within the sinus tonsillaris. Where the tonsils have been entirely removed, it is quite possible, however, and, in fact, occasionally the case, to observe attacks of acute inflammation of the glandular tissue which surrounds the tonsils and the condition is to be differentiated from tonsillitis.

Treatment.—The chief indication in the way of treatment consists in removing all, or

as much of the tonsillar tissue as possible. There is very little, if any, evidence which can be produced to show that their removal has any deletrious result upon the general system. There is much clinical evidence to show the good results from their removal. As to the best method of accomplishing this end there is a great diversity of opinion. The writer has had more or less experience with them all. Astringent application may accomplish something, but in the majority of cases no special change occurs. Massage, electrolysis and high frequency electricity with the vacuum electrodes have made no perceptible impression in my experience.

Galvano-cautery-puncture is useful in some cases and has been employed in the following manner: Introduce into one of the crypts a small cautery knife, heat while in situ and burn its way out. If four or five of such burns be made at one sitting, there will follow considerable shrinking. Ten or fifteen operations will be required to produce a moderate degree of hypertrophy to satisfactory dimensions. In marked cases a cutting operation is the only thing which can be relied upon to effect a cure. Milder methods in the vast majority of cases will prove deceptive. Celsus, in 10 A. D., wrote about the cutting out of tonsils and considered it an ordinary and trifling procedure. The manner of operating in those days was not radically different from our own. In fact, many of the so-called new methods as exploited within recent years are, in the main, but a return to the ways of our fathers. Their instructions were very precise regarding the tonsils being seized and drawn out by a tenaculum and "cut out by the roots," as they expressed it. They practiced what we now advocate under the term tonsillectomy and by which is generally understood the careful dissecting away of the whole gland. The operation of tonsillotomy, which is the one commonly performed by the tonsillotome, amputates only a portion of the gland. In adults particularly tonsillectomy is preferable. The distinct advantages in its favor may be stated as follows:

1. It prevents recurrence of tonsillitis because of the removal of all the diseased crypts and their contained bacteria.

2. When it is perfectly done there remains a smooth surface, a result not always possible to accomplish by a tonsillotomy.

3. It liberates the faucial pillars and restores the activity of the soft palate with a corresponding improvement of the voice.

4. It is the only practical method in many cases where the gland is soft and a firm hold cannot be obtained by the tonsillotome.

The operation or removal may be done by the use of the tonsillotome, the cold-wire snare, the tonsil punch, the galvano-cautery snare, the bistoury or scissors. The use of the bistoury appeals to me as being a more thoroughly surgical procedure. The cautery snare, which possesses the advantage of removing the tonsil without hemorrhage, is a slow procedure, and my experience with it has been very limited. We have, however, used the cold-wire snare, but see no advantage in its use over other methods. It does not make a clean cut, and hemorrhage follows its use just as frequently, in my judgment, as in other methods of excision. I had one annoying case of bleeding follow the use of a cold snare in an honored member of our profession, and the only case of fatal hemorrhage I have ever seen was where it was employed. It was that of a child three years of age, whose tonsil was removed under general anesthesia with the snare. The night following the operation there was a secondary hemorrhage and also two or three days later another one. On the fifth day a profuse hemorrhage occurred and it was at this time that I was asked to see the case. It took place during the early morning and before the doctor who operated, a skilled and an experienced man, arrived the child was almost exsanguinated. He removed it to a hospital, where I saw it at 9 o'clock, and found the hemorrhage practically under control, but the patient very weak. The necessary treatment was administered, such as saline injections, strychnia, etc., but in eight hours the child passed away.

In children I consider that the operation of tonsillotomy with the tonsillotome a successful method in the large majority of cases. It must not consist, however, of making a dive, as it were, at the projecting gland and simply decapitating it. If adhesions exist between the tonsils and the pillars they should be broken up and the tonsil drawn out from its bed in the sinus tonsillaris with suitable

forceps before they are excised. The technique of performing a tonsillotomy, tonsillectomy, etc., is unnecessary before a society of specialists. Would state, however, that the tonsillotome which has served me best is the "Simplex"—modification of the Mathieu instrument. I prefer a sharp pointed bistoury, Richard's forceps and Robertson's scissors, for tonsillectomy.

The treatment necessary for a case following excision is simple, provided no complications exist. It usually consists of alkaline antiseptic sprays similar to the local treatment given in acute tonsillitis. For a few days following the operation the excised surface will have upon it a grayish membrane. The diet should be liquid. Ice-cream is as grateful as anything that can be given, owing to its benumbing effect upon the pharynx.

Anaesthetic.—The question of the anaesthetic to employ is a point of importance. The operation is not especially painful, but terrifying to children, so that it is more satisfactory to put them to sleep. In young children I employ ether and in those from about eight to sixteen years somnoform or ethyl chloride. The effects of these two last named general anaesthetic agents are practically the same and they are ideal if properly administered for tonsillotomies. In adults for tonsillectomies local anaesthesia is preferable. The throat should be sprayed with a 4 per cent. solution of cocaine to overcome the pharyngeal reflex and the faucial pillars brushed a few times with a 10 per cent. solution. It is my practice to follow this by seven or eight ten-minim hypodermic injections in and about the tonsil of the following solution: Cocaine, one-fourth per cent. and twenty M. of suprarenalin solution to the ounce of normal salt solution. By using this strength I have never seen a case of cocaine toxæmia. The operation becomes practically painless and there is not much bleeding. Indeed, I have removed some tonsils without the loss of more than a half ounce of blood and have not met with a single secondary hemorrhage since using this weak solution.

Objections to Operation.—It is amazing the opposition which is brought to bear against any operation for the removal of the tonsils. This opposition is not confined to the laity alone. We have met with many objections and arguments against any operative interference. The one most often put forward is that their removal will have an injurious effect upon the voice. This is really one of very great importance to those who sing or are public speakers. Ample and wide pharyngeal space is one of the requisites for the production of the best tone and it is but natural that anything which tends to restore the pharynx to its normal capacity will improve instead of impair the quality of the voice. It is certain to decidedly benefit and never injure it. Many of our most brilliant singers and noted orators have submitted to the operation with the result of improved vocalization. Accompanying the hypertrophy is usually a catarrhal inflammation of the laryngo-pharynx and larynx, which naturally inflicts more or less injury upon the quality of the voice and the tone producing power. Again the voice in enlarged tonsils has a sharp and nasal quality, owing to a relaxed, or, as some writers have described it, a semi-paretic condition of the soft palate associated with the enlarged tonsils. The fact that they will grow again and necessitate a second operation offers an excuse to those who are really opposed to any operative procedure. The fact is, it is of the rarest occurrence for the tonsils to grow again after a thorough operation. In young children if a sufficient amount is not removed there may be an occasion for a second operation. It is a rare exception, however. I have only met in my series of cases a few instances where the hyperthropy recurred. It has been asserted that their excision destroys a patient's virility, but no reliable facts can be submitted to substantiate any such assertion. This impression, however, has been the means of the writer losing several operative cases. Whatever arguments that have been advanced to show the relationship between the organs of generation and the tonsils is absurd and is based only upon the fact that orchitis and mumps are associated, making no distinction between the tonsil and its anatomical neighbor, the parotid gland. Another objection against operation is based upon the prevailing opinion among the laity and some physicians that the tonsils atrophy spontaneously at puberty. It can be stated that experience and statistics do not show that they do atrophy at this period. Admitting, however, that such was the case, it would be no argument in favor of their retention, as the injury done to the

child in the meantime might be irreparable. There is an opinion entertained by some that tonsillar hypertrophy acts as a protection against certain diseases, and this is an objection advanced against their removal. The idea is a pernicious one and the very opposite is true. Their presence renders a patient even more susceptible—instead of acting as sentinels against disease. Nothing is more serious or distressing than a diphtheritic membrane engrafted upon an already hypertrophied tonsil. We are sometimes consulted about operating upon a feeble child. If due to the enlarged glands, the most effective way is to remove them at once and not delay that which must come inevitably.

The question of hemorrhage is really one of great concern and may be said to be both real and imaginary. That severe bleeding does occur at times cannot be denied. Cases are not as frequent, however, nor is the danger attending them usually as great, as is generally reputed. I have never met with a primary hemorrhage requiring any treatment other than the use of ice and astringent gargles. We have had six rather troublesome cases of secondary hemorrhage.

In the case of a known bleeder the only operation to be considered is that with the galvano-cautery. Even by this method in one case I had to deal with an annoying, persistent bleeding.

A most unusual case of tonsillar hemorrhage was recently brought to my notice. I was consulted over the 'phone in regard to it, but did not see the patient, as a doctor in the neighborhood was called in. It was that of a medical student who amputated his own tonsils. He succeeded in getting one tonsil out very satisfactorily, but in attempting to remove the other lacerated the posterior pillar and severe hemorrhage followed, lasting from 10 A. M. to about 10 P. M. This is the only instance I have ever known of a person undertaking the removal of his own tonsils. That it was a foolhardy procedure goes without saying.

There has been a good deal of discussion as to whether tonsillotomy is *necessarily* a hospital operation. In the opinion of the writer it is *not*, and particularly so in young children. While the conveniences of a hospital are always to be desired and appreciated, I cannot see that it is *imperative* or that it largely eliminates the danger from primary or secondary hemorrhage or sespis, as some advocate. The majority of my cases have been operated upon in my office, at the patient's home, and in dispensary service.

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THE OCULAR MANIFESTATIONS ASSOCIATED WITH INTRACRANIAL LESIONS COMPLICATING AURAL DISEASE.*

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Intracranial lesions, complicating acute middle-ear disease are, fortunately of comparative infrequency. Otherwise the mortality under our present methods of brain localization would be appalling. Notwithstanding recent scientific research and the advances accruing therefrom, we are still very deficient in our ability to definitely locate the majority of lesions involving the interior of the skull, especially when presenting a confusing symptom complex.

With much interest and hopeful expectancy we watched the development of neurology, and the advances in brain localization promised by research in this important branch of medicine. Modern hematology and bacteriology furnished us with additional diagnostic data of much value. Radiography, still in its infancy, has added an important chapter to assist in the diagnosis and localization of pathologic changes within the interior of the skull. From ophthalmology and its exponents we have expected much in solving the perplexing diagnostic difficulties found in intracranial diseases. And we have not looked in vain, for this broad and progressive branch of medicine has added its quota to both the general and special knowledge of the subject. Nevertheless, in the face of all this illumination of the topic, we are still far from the goal of accurate brain localization.

It is my firm conviction, however, that while ocular symptoms are often invaluable when present, the diagnosis should not be questioned when other symptoms point to a certain condition, notwithstanding the absence of changes in the visual field. Eye symptoms, in this respect, are analogous to blood examinations. Occasionally there are fundus changes accom-

*Read before the Section on Eye, Ear, Nose and Throat of the Medical Society of the State of Pennsylvania, at Philadelphia, September 28, 1909

panying middle-ear suppurations which are not complicated by intracranial lesions. Although these are usually vascular in character, they do not amount to a neuritis.

Ocular symptoms, with the exception of nystagmus, are of definite significance to the extent that they appear to develop only when otitis has involved the tissues within the cranial walls. Hyperemia of the nerve head, neuritis, and papilledema point strongly to the conclusion that intracranial lesions exist or threaten, but do not justify any conclusions as to their exact nature. The absence of intraocular changes does not exclude the presence of intracranial suppuration. Given other characteristic symptoms, a negative ophthalmoscopic examination has absolutely no significance.

Deep-seated, purulent diseases of the ear, in affecting the brain, may lead to pathologic changes involving the ocular tract. Affections of the brain and its membranes (sinus tromboses) produce lesions of the optic nerve (hypermia of the papilla, neuritis, and less frequently papilledema), amaurosis, paralyses of the muscles, inflammation of the orbit and of the lids. All are of special value in the diagnosis and treatment of aural disturbances.

The importance of the association of the eye with the ear through their nervous connection has been largely overlooked in the past. Rampoldi* has shown clearly the improvement in hearing following operations for glaucoma, which could only occur through a betterment of the eye condition reflexly producing an improvement in the hearing.

The eye symptoms, of reflex origin, are influenced through the eighth or auditory nerve. The simultaneous supply of the ear and eye by fibers of the trigeminal nerve explains why, in purulent middle-ear disease, we may have irradiating, boring pain in the orbital cavity, as well as supraorbital and infraorbital neuralgia. Associated with this condition there are often conjunctivitis and lachrymation. Reflex blepharospasm has been observed. Rampoldi* found that blepharospasm caused by the presence of foreign bodies in the external auditory canal was relieved by the instillation of cocaine in the eye.

Less positive are the observations regarding the acuity of vision and the fields from reflex causes originating within the ear. One observer, in an examination of twenty-five patients suffering from diseases of the auditory apparatus, found decreased vision in eleven upon the side affected; in eight it was increased, and in twenty-one slightly improved, following the relief of the ear disease.

Nystagmus and conjugate deviation of the eyes are not uncommon in disease of the labyrinth and in the destruction of the semi-circular canals, whether of traumatic or inflammatory origin. In this manner the fact that air or water introduced into the tympanic cavity will give rise to nystagmus, may be explained, through the mechanical irritation which it produces.

The phenomena of nystagmus, in connection with labyrinthine disease, are not thoroughly understood. Writers vary in their conclusions as to the various tests used to determine the presence or absence of nystagmus from this cause. It may be present in labyrinthine involvement, but is not essential as a diagnostic factor, since it may be congenital, associated with defective vision, or spontaneous. It can be induced by electrical stimulation, rotation or caloric tests, and by moving rapidly in a certain direction, with the eyes fixed in an opposite one. To further determine its pathologic significance we may resort to galvanism, compression, Rombergism, and the gait and Von Stein tests. Rotation and caloric tests give practically the same results. We have noted that the more acute the supposed labyrinthine involvement, the more definite are the responses.

In a series of cases observed in the Jefferson College Hospital, the supposed acute labyrinthine cases, in connection with those of chronic suppurative otitis media, were carefully examined and the results showed most of the tests to be confusing and unreliable.

Although papilledema is a valuable diagnostic symptom in meningitis, it is not always present. This is especially true in the early stages. In every case in which there is a suspicion of the existence of an intracranial lesion following or accompanying disease of the middle ear, an examination of the fundus of the eye should be made, because there may be papilledema, even to a marked degree, without there being any appreciable alteration in the visual power. And conversely, the maintenance of perfect sight ought not to deter one from

*Reports of Rampoldi, in Annali di Ottalmologia, Bk. 18, S. 163, 1888.

thorough and frequently repeated examinations with the ophthalmoscope in suspected cases, because one of the earliest signs of extension into the cerebral structures may be alterations in the optic disc.

Illustrative of this point is the case of a male, 21 years of age, who applied to the Ophthalmological Department of the Jefferson Hospital, complaining of severe frontal headache and attacks of temporary loss of vision. An examination of the eye-ground showed a perivasculitis and a hazy nerve head, with signs pointing to meningeal involvement. Further development of the history elicited the fact that there was considerable swelling over the left mastoid process, but the patient never had suffered from a discharging ear.

An examination in the aural clinic showed both membrana tympani intact, with an entire absence of any inflammation. There was, however, in addition to the edema marked tenderness on pressure over the process. The outcome of this case is unknown, from the fact that the patient, overhearing the conversation about operative interference, disappeared from the clinic. It serves, however, to show that the ophthalmologist suspected some intracranial lesion without knowing that the patient suffered from aural disease.

It is a fact that in the majority of aural affections involving the interior of the skull, if we wait for the appearance of diagnostic symptoms, we run the risk of losing our patients. On the other hand, we are not always justified in operating in the absence of more or less characteristic phenomena. It is just this uncertainty from lack of focal symptoms that induces the procrastination which so often leads to a fatal termination.

It is the exception rather than the rule, in my experience, to find choked disc or optic neuritis in patients suffering from meningitis of otitic origin. In suspected cases, especially in children, we should distinguish between meningeal irritation, or meningism, which can be classed as a dilatation of the meningeal vessels, and a true diffuse lepto-meningitis, which, in my opinion, is always fatal, while the other class of cases usually recover without surgical interference. So, also, a certain number of cases of serous meningitis will positively yield to surgical treatment.

In meningitis there is contraction of the pupils and photophobia in the early stages. As compression develops the pupils become less sensitive, slowly dilate or become fixed. We find no changes in the fundus when the disease is very rapid, but optic neuritis may be present if the disease is slowly progressive.

Lesions involving the interior of the skull produce an increase in the intracranial pressure; hence it is possible to have an optic neuritis in meningitis, cerebral or cerebellar abscess, epidural abscess, sinus thrombosis, or in any other brain condition causing pressure, such as, for example, an intracranial tumor. It will be observed therefore, that although the presence of a choked disc is an important aid in the diagnosis of intracranial lesions, it is not characteristic of any particular affection and is only significant when its relative value to other more or less definite diagnostic data is duly considered.

In septic thrombosis of the lateral sinus, should the cavernous sinus become involved by way of the petrosal sinus, there may be exophthalmos, edema of the eyelids, ecchymosis, panophthalmitis or periorbital abscess. In from 45 to 50 per cent. of the cases optic neuritis is found.

When a brain abscess is present there are positively no ocular symptoms to define the location. Optic neuritis, when present, is due to intracranial pressure, usually bilateral, although it may be more marked on the affected side. Symptoms which indicate the lesion, but not its location, are photophobia, external strabismus due to pressure on the motor oculi, and dilated pupils if the abscess is large; per contra, if the abscess is small the pupils are small and sluggish. These latter symptoms occur especially when the pressure is exerted in the temporo-sphenoidal lobe. The more marked changes in the fundus, such as neuritis, occur late, except in abscess of the cerebellar region, in which it is a more constant symptom.

The histories of the following cases are interesting from an ophthalmic viewpoint:

Case I.—M. K., female, white, aged 7 years. When 18 months old she had measles, complicated by pneumonia. During convalescence from the latter she suffered from an otitis media of both ears. The right ear recovered itself in due course but the left ear continued to discharge uninterruptedly to date, or for a period of about five years. The child consulted

me in the early part of the present year, complaining of failing memory, increasing irritability and offensive otorrhea, which prevented her continuing in school.

An examination showed the left ear to be filled with a brownish-yellow, foul-smelling discharge. When this was removed it revealed an entire absence of the membrana tympani, malleus and incus. There was distinct bulging of the superior and posterior wall of the external auditory canal. The discharge escaped from the attic almost as fast as it could be cleared away with a cotton carrier. There was some tenderness on deep pressure over the mastoid process, which, together with the bulging of the superior and posterior wall and the streptococcic infection, induced us to advise a mastoid operation for the cure of the chronic otorrhea, no intracranial lesion being suspected except from the fact that the patient suffered from some loss of memory and increasing irritability, as stated above. An examination of the eye-ground was negative.

A radical operation was performed the middle of March, 1909, during the progress of which a large, carious opening was found in the tegmen antri, through which a quantity of pus continually escaped. The introduction of a probe showed the location of the abscess formation to be in the temporo-sphenoidal lobe, the sinus leading therefrom being sufficiently large to admit of a good-sized drainage tube.

The patient progressed exceedingly well following the operation. Her general health, especially, seemed to improve for a period of two weeks, when she was suddenly attacked by headaches, frequent vomiting and violent convulsions, together with right lateral nystagmus of both eyes at the rate of about one hundred movements a minute, while the right side of the face was drawn up in rapidly succeeding twitching movements.

A second operation was at once performed, the old tract being explored but no further pus found there. The Jackson brain forceps were introduced posteriorly to the parent abscess formation and a large quantity of pus was evacuated from this location. The patient at once improved, but did not again assume the apparent state of health that followed the first operation. In fact, she continued to have occasional attacks of nausea and headache. About four weeks after the second operation the frontal headache became continuous. The child was evidently very ill. A third operation was decided upon, with a view of evacuating additional pus if it could be found. This time the exploration was made anterior to the parent abscess formation, which fortunately evacuated considerable pus. No additional secretion was found to come from either the first or second sinus. From this time on the child made a slow but uninterrupted recovery and to-day seems to be entirely normal, both in regard to her general health and mentality.

An important point in this case was that notwithstanding the extreme gravity of the child's illness, there were absolutely no ocular manifestations whatever, except the nystagmus above cited, though the eye-ground was repeatedly examined.

Case II.—C. M., male, white, aged 23 years. Patient had suppuration of right ear at one year of age, the discharge continuing for two years. From that time he was free from any aural trouble for twenty years, or until the present condition, which began three weeks prior to the first consultation, with severe pain in the right ear, followed in twenty-four hours by a discharge which continued for three days and then suddenly stopped, the patient being immediately seized with severe pain in the back part of his head. This pain persisted for two weeks, when he consulted his attending physician, by whom he was referred to the Jefferson Hospital.

Patient claimed he was unable to hear, but tests showed that he retained some sound perception. Canal of right ear was filled with a creamy, foul-smelling pus. It was swollen, and bulging of the superior part of the membrana tympani and the posterior wall of the canal was observed, together with great tenderness on pressure over the mastoid. Temperature was 97.1°.

Incision of the membrana tympani and aspiration was performed and the patient admitted to the ward for further examination.

Dr. Howard F. Hansell examined the eyes and found them normal in every respect, except that the retinal veins were over-filled and tortuous, showing some interference with the venous circulation back of the eyeball. This congestion was more marked on the right side than on the left. Examination of the eyes gave

no indication of the site of the supposed cerebral lesion.

The neurological report of Dr. F. X. Dercum revealed nothing of importance in the way of localization.

Dr. John H. Gibbon examined the case from a general surgical standpoint and reported that, in his opinion, the patient had an edema of the meninges and suffered from intracranial pressure, but could find no evidence of a localized abscess. The patient died twenty-six hours after admittance to the hospital.

The post-mortem examination showed an abscess in the right temporal lobe extending in the long axis. This was filled with a yellowish-gray, very thick pus. Somewhat anterior to the center was a second small abscess directly internal to and on a level with the larger.

The outcome of these cases again illustrates the importance of satellite abscess formations arising from the parent pus cavity, which, as I have pointed out on several occasions, and again wish to repeat, are, in my opinion, the cause of death in those cases where the pus from the original cavity has been successfully evacuated.

To summarize: Eye symptoms, like blood examinations, should not influence the diagnosis of an intracranial lesion in the presence of other distinctive symptoms.

In brain abscess, ocular symptoms may be absolutely lacking or they may occur so late as to make it impossible to wait for their appearance.

In meningitis ocular symptoms are frequently present, but are variable.

In extra-dural abscess and sinus thrombosis there are no eye symptoms unless the condition is extremely far advanced.

Labyrinthitis usually has nystagmus as a constant symptom from the beginning of the inflammation.

For diagnostic purposes, the eyes should be subject to frequent examinations by an expert in all severe aural diseases.

1429 *Spruce Street.*

Eli Lilly & Co., Indianapolis,

Are building stock rooms, covering a floor space of about an acre, connected with their laboratory by subway. It is to be practically fireproof. This new building is needed to take care of the increased demands on the firm.

THE SURGICAL TREATMENT OF HEPATIC ASCITES.*

By W. LOWNDES PEPLE, M. D., Richmond, Va.
Professor of Histology and Assistant to the Chair of Clinical Surgery, University College of Medicine.

I have selected the foregoing subject primarily to afford an opportunity to bring before the Academy a case which seems typically illustrative, and yet presents many puzzling features. Since several among us have had an opportunity of a more or less critical study of it from time to time, it seemed well to present it in its entirety up to the present date, with its clinical findings and the subsequent history (which I have, fortunately, been enabled to follow), so that we may thresh it out here upon the floor and thus clear up the obscurer points.

Hepatic ascites is regarded as a seepage of serum into the peritoneal cavity, due to resistance offered to the flow of the portal blood through the liver from deposits of fibrous tissue within the liver structure. Let it be borne in mind that the operative procedures to be reviewed are not intended to deal with cirrhosis of the liver, but are designed for the relief of ascites, its most distressing result. Hence, we shall not attempt to set forth a clasification of cirrhosis, which varies numerically with the number of authorities consulted, nor with the theories of etiology.

The operation is designed to offer mechanical relief by establishing a collateral venous anastomosis between the portal and systemic vessels around, instead of through, the liver, presupposing that the ascites is due to mechanical failure of the normal blood channels. When we trace back our memories and recall the broken derelicts whom we have tapped from time to time till death claimed them: when we remember that such men are actually or prematurely old; that the conditions producing cirrhosis have also crippled their kidneys, hearts and blood vessels, and that temporary recovery would only mean one more plunge into dissipation, the field seems far from promising, and we naturally ask the question, "Is it worth while?"

A closer study of the subject will answer this definitely in the affirmative, for it will be found that many men with years of usefulness before them, women with no alcoholic history

*Read before the Richmond Academy of Medicine and Surgery, September 21, 1909.

at all, and children far oftener than one would suppose, are subject to cirrhosis of the liver.

The prognosis, in the light of statistics, is also far from encouraging. The mortality varies greatly with the groups of cases collected by different investigators. A fair summary, in the words of one writer, is that one-third die within a month, one-third are greatly benefited, and one-third are slightly improved or unaffected. The immediate mortality, which was very high in the early cases, has been greatly reduced and will unquestionably be still further improved by a better selection of cases for operation and a wiser selection of operative procedures to suit the individual cases.

Operations.—The operation as originally described by Talma and popularized by Morrison and Drummond, consisted in a linear incision near the median line beginning a little below the ensiform cartlige. Through this the abdomen was mopped dry of fluid and the anterior surface of the liver and spleen scarified with gauze by rubbing. The omentum was then stitched to the parietal peritoneum of the anterior abdominal wall and the wound closed. This procedure has been variously modified by other operators. Schiassi fixed the omentum between the peritoneum and overlying muscles and sutures the spleen to the parietal peritoneum. Von Eiselberg fixes the gall-bladder to the anterior abdominal wall. Ito and Omi leave in gauze drains or plugs, causing the intestines to adhere to the parietes. By some others, the omentum is implanted within the rectus sheath.

Of the various modifications the one practiced by Narath, from its rational simplicity, seems deserving of especial attention. He makes a small incision, pulls out the omentum and stitches it in the areola tissue just beneath the skin. He then closes the wound around the artificial epiplocele tight enough to avoid hernia and not too tight for constriction. He claims that the collateral circulation is best estabished through the superficial veins, and states that a very evident enlargement of these veins can be noted within five days. Its advantages are that it can be quickly done under cocaine anesthesia with little or no shock, either on one or both sides of the median line at one or two sittings. Its disadvantage is the possibility of hernia through the imperfectly closed fascia.

The after-treatment of these cases is comparatively simple. The pelvis drain used by Morrison has been abandoned by most operators. The abdomen is bandaged tightly from chest to hips. The diet is dry with as little fluid as possible. The bowels are kept open with saline laxatives. Usually, from one to three subsequent tappings are needed before the colateral circulation is properly established.

Case.—E. S., white, aged 18, works in a tobacco factory as packer of boxes. Her father died of heart disease and paralysis; mother living and healthy. She is the youngest of three children. The first died suddenly at the age of five months; the second is 24 years of age, normal in every way, is married and has three healthy children. She was a large, healthy baby, but had a rather full abdomen. She developed normally up to the age of 3 or 4, when growth and development seemed retarded. She went through the diseases of infancy, but was never seriously ill. She attended school up to the age of 12, and was bright, quick and capable. She had one scanty menstrual period at 15, but has not menstruated since, though she has had backache and pelvis pains at times.

In 1906, three years ago, she stopped work on account of feeling tired and badly, and went to visit relatives in the country. She soon noticed that her waist was enlarging and that she became tired and even exhausted from slight exertion; also that her lips and fingers were blue. There was some swelling of the feet and ankles at this time. She was treated by Dr. W. H. Parker and was soon able to return to work.

In May, 1907, she was seen by Dr. Harry Baker, who says that she had at this time a marked dyspnea upon the least exertion. Her lips were purple and her face and body badly mottled. She was unable to climb stairs or to lie down at night. Her liver was hard and extended down to the umbilicus. There was no ascites, no swelling of the feet and legs nor any detectable lesion of the heart.

Under treatment the dyspnea and cyanosis disappeared. She could lie down at night and, for a short time, was enabled to return to her work in the factory. The improvement did not last long, however, for her symptoms returned and fluid began to accumulate in her abdomen.

I saw her some three or four months later—in the spring of 1908. She was enormously

distended. Her face, hands, arms and body were deeply cyanosed with a peculiar blotched or mottled appearance. She suffered greatly with dyspnea, and had been unable to lie down for some time. There was no swelling of the feet nor edema anywhere, nor could I detect any heart murmur.

First, I tapped her, removing four or five gallons of fluid. Second. In the fall, Dr. M. E. Nuckols tapped her, getting about three gallons. Third. In December, I removed four gallons. Fourh. In February, 1909, just prior to operating, I removed two gallons.

Examination.—A small, poorly developed girl of quick mentality and bright and cheerful mien. Though actually 18, she does not look to be over 13 or 14. Her figure is slight and singularly girlish. She is 4 feet 10¾ inches in height and weighs 90 pounds. The breasts and vulva are small, undeveloped and child-like. There is absence of the pubic and axillary hair. The two lobes of the thyroid are somewhat enlarged and rather harder than normal. There is no exophthalmos. Temperature, 97⅕° to 98⅗°; pulse, 60 to 72; respirations, 18 to 20. Urine, normal, except a trace of albumen. Blood, red cells, 6,000,000; white, 4,400; hemoglobin, 85; color index, 70. Differential count shows nothing abnormal.

The heart, examined by Dr. W. S. Gordon before tapping: Right heart enlarged, left but slightly; no murmur can be detected. Examined by Dr. J. G. Nelson after tapping: "Shows general hypertrophy, especially the right ventricle. The valves are in excellent condition. The muscle is normal, except for hypertrophy. The heart sounds are slightly accentuated, especially the pulmonary second sound. The condition of the heart may be accounted for by prolonged increase of resistance in the general circulation due to accumulation of fluid."

The lungs: "Slight general hyper-resonance and exaggerated breath sounds due to lack of development of the bony structures and fatty and muscular tissues."

The abdomen, after tapping: The liver is seen to extend down almost to the umbilicus. The left lobe is plainly palpable well below the costal margin. The liver feels hard and smooth. Its lower border is sharp and clearly defined. The spleen cannot be felt.

Measurements: Around the iliac crest, 28½ inches; around the umbilicus, 27½ inches; around the liver one inch below the xyphoid, 29½ inches. The veins of the abdominal wall are not much larger.

Negative History.—She has never had nausea, spitting or vomiting of blood, hemorrhoids or jaundice. There is no history of tuberculosis or malaria; no history or signs of specific trouble. She has never suffered much pain except after tapping, when it is acute and of a cramping character and in the pit of the stomach. Her bowels have moved fairly regularly, and the kidneys are normally active.

Diagnosis.—Hypertrophic cirrhosis of the liver. Operation (two days after tapping): Under chloroform anesthesia a right rectus incision was made a half inch to the right of the median line from the costal margin to the umbilicus. A half gallon of fluid was evacuated and the abdomen mopped as dry as possible. Palpation of the viscera revealed an infantile uterus with diminutive ovaries; normal kidneys and spleen enlarged probably one-third. The intestines were normal in color, their vessels not engorged; omentum very small, very thin and scanty of fat; the vessels did not seem to be enlarged. There are no adhesions, no tubercles nor evidence of peritonitis.

The liver is of a dark, purplish color, not much harder than normal to the touch. There are no nodules upon it nor hard areas within its substance. The margin presents a peculiar fringy appearance like a miniature cockscomb. A small wedge was excised from the margin, which I present mounted for microscopic inspection. The anterior surface of the liver was rubbed lightly with gauze, which readily provoked a free oozing of blood. On account of the very small size of the omentum, it was decided to make the liver anastomosis as broad as possible. Turning back the abdominal wall, a matter easy of accomplishment in its relaxexd condition, the parietal peritoneum was stitched to the oozing surface of the liver from the upper angle of the wound to the lower margin of the liver, one and a half inches from the incision on either side. The peritoneum was next closed from above downward, the stitches including the liver tissue thus making an attachment by three rows of sutures one and a half inches apart from the costal margin above, to the free border below. Before closing the

peritoneum below, the omentum was turned up and fastened to the peritoneum below the margin of the liver. The wound was closed with tier sutures.

Convalescence was uneventful. She was given a dry diet and the bowels kept active. On the tenth day she was given potassium iodide, beginning with five grains and going up to fifteen grains, three times a day. She has continued this up to the present time.

On March 17th, measurements showed one-half inch gain at the umbilicus and little or no fluid present. She left the hospital on March 21st, and has reported at my office every two or three weeks since that time. She goes wherever she wishes, eats heartily and seems perfectly well and happy. She is still troubled occasionally with dyspnea on exertion, and is, at times, cyanosed. She chills very quickly, showing poor circulation. The liver is somewhat smaller, measuring two inches less below the xyphoid. The abdomen is one inch smaller around the umbilicus.

On August 25th I gave her thyroid extract, three grains three times a day. On September 20th she came to me with several quarts of ascitic fluid and lips cyanosed. I put her on dry diet, stopped the thyroid extract, gave her a tablespoonful of Epsom salt daily, and in three days the ascitic fluid disappeared again.

Pathologic report on excised specimen, by Dr. E. Guy Hopkins: Capsule thickened and congested. Perilobular connective tissue increased in amount and contains numerous round cells and leucocytes. Bile ducts apparently increased in number. The interior of the lobules shows a network of new connective tissue following the cords to the central vein. The blood vessels are congested, more especially the branches of the portal vein. The liver cells are normal in size, shape and structure.

Diagnosis.—Hypertrophic cirrhosis. From a rather careful review of the literature upon this subject, and from experience limited to this one case, the following practical points are deduced:

1. That the operation should be done early.

2. That cases of enlarged liver give a more favorable prognosis than those in which the organ is contracted.

3. That a preliminary tapping, twelve to fourteen hours before the operation, will make the work easier and less sloppy, and avoid the shock which sometimes follows the rapid evacuation of large quantities of fluid.

4. That if the operation is attempted at all in the later stages of the disease, some simple plan, such as described by Narath, should be done with local anesthesia.

5. That abdominal drainage is unnecessary, but mopping the cavity thoroughly dry is very important.

6. That the patient be cautioned against the wearing of tight bands or belts about the waist after leaving the hospital, lest the superficial anastomosis be interferred with, a point to be especially emphasized when the patient is a woman.

As to the case under discussion, I am not prepared to say whether the cirrhosis was due to a primary heart lesion or not. I do not believe it was specific. The iodide was given empirically. I am not prepared to establish a relation between the cirrhosis and her peculiar, undeveloped physical condition or, in the event of such a relation existing, to state which is the cause and which the result. It is upon this point, especially, that I desire the help of the Academy.

I do not regard this patient as cured, but remembering that seven months of almost complete relief have followed an operation which was preceded by nearly three years of invalidism, growing progressively worse, latterly threatening her life and requiring frequent tapping to make life endurable, I do claim that this operation is entirely justified even if nothing more is gained.

1000 *West Grace Street.*

TAX REFORM IN VIRGINIA.

By GEORGE BRYAN, Richmond, Va.
Member of the Richmond Bar.

The existing system of taxation in Virginia is full of inequalities and hardships. While it is impossible to devise a method of taxation which will be acceptable to every mind, there is no reason why an earnest effort should not be made in the direction of removing those features of the present law which are manifestly unjust in their nature and unwise from the standpoint of policy.

The fundamental principle of taxation is thus tersely stated by Adam Smith: "The subjects of every State ought to contribute toward the support of its government as nearly

as possible *in proportion to their respective abilities—that is, in proportion to the revenue which they respectively enjoy under the protection of the State."* The policy of a State should ever be to produce by an equal and uniform imposition of the burdens of government, economically administered, a revenue adequate for its support—and no more; to invite and encourage the investment of capital for the development of the revenues of the State and the employment of its labor, instead of to frighten away investors by the imposition of unnecessarily high rates for the present and the suggestion of others yet to come.

This is a propitious season for the discussion of tax reform in Virginia. Certain changes in the former tax laws were made by the Constitution of 1902 and the legislation supplemental thereto, the results of which had to be made manifest to the eye of experience and not left to speculation and conjecture, however intelligent. The history of the last seven years has, however, demonstrated the fact that the State may confidently depend upon the sufficiency of the revenues derivable under the present Constitution for the satisfaction of its charges of administration. The stipulated payments on the State debt are not only being promptly met, but are anticipated, the result being a proportionate saving of interest. It should, therefore, be the first duty of the State to examine its tax system for the purpose of discovering and removing any features which by reason of excessiveness, doubleness, lack of uniformity or other manifest injustice at once irritate the tax-payer and invite evasion. One of these features is the annual State *special* license tax imposed upon physicians.

At the approaching session of the General Assembly a bill is to be introduced to abolish this tax. If the Legislature would deal wisely and justly with the subject there should be no doubt of the passage of the bill. The existing requirement is directly opposed to the spirit of equality and uniformity which, according to the Constitution of the State as well as elementary principles of taxation, should control the imposition of all taxes. It is believed that this is susceptible of ready demonstration.

The tax is nothing else than another income tax, for with the great majority of physicians, their professional income is their only source of revenue. The theory of its injustice is that it is "an occupation tax" for a "privilege" granted, thus placing the profession upon the basis of pawnshops, junkshops, billiard and bagatelle saloons and other vocations and enterprises in which questions of police are a necessary and proper element. The entire theory is wrong. The State should tax no man for the "privilege" of trying to make a living. Under the present law it is not only taxes the professional man but, if he cannot pay the tax, fines him heavily and in default of payment, puts him in jail!

Let it be noted, however, that the form of the tax is itself a fiction—that of an "occupation" tax. There is no substantial reason why a professional occupation should be singled out for the bearing of heavy burdens and other pursuits and callings, which are none the less "occupations," because they are of a business rather than a professional nature, be entirely exempted from the license charge. The truth is, that the tax upon the professional man is *a tax upon an assumed asset* which is far from being one in fact. If the professional man is to be taxed twice upon his income, derived from his fees, why should not the salaried bank, railroad or insurance officer be required to share in and lessen the burden, and pay a small license tax upon *his* occupation? Why not, indeed, the book-keeper, the clerk, the salesman, the printer, the painter, the bricklayer, whom no one desires to tax? There is absolutely no inherent difference between the two classes of "occupation," professional and commercial, justifying discrimination in this respect—and no one can sincerely assert the contrary. The "privilege" enjoyed by the physician does not differ in a single material particular from that of each of the classes of bread-winners mentioned. Each enjoys the same measure of civic protection, but the professional man bears a burden which any candid mind must perceive to be illogical and arbitrary.

It is believed that if the Legislature will consider the question from the standpoint of fairness and equity alone, it will grant the desired relief. No appeal need be made to its sympathies. The right of the matter is sufficient in itself. The gravest danger which the movement has to encounter is the tendency (and it is a natural one) of the legislator not to vote for a measure which will take

away a distinct source of revenue. He may, and indeed probably will, admit the truth of all that can be said on behalf of the measure, and will yet say, "Well, I don't know the exact amount of the tax and it will have to be made up from some other subject of taxation, and, therefore, we had better go slowly."

This attitude can best be met by a presentation of the growing resources of the State and a respectful, but insistent, demand for tax measures predicated upon constitutional principles rather than upon a tacit recognition of injustice and an indisposition to correct it because it has existed for a long time. Tax reform is one of the vital needs of Virginia to-day and it may well and safely begin with the abolition of the physicians' *special* license tax—this to be followed by an earnest effort at intelligent revision of the entire system, the dominating spirit of which should be at once conservative and bold, having for its basal principles, first, the necessities of the State in the matter of an income ample at the present rate of taxation and upon existing assessments for the discharge of its obligations, and also the equally important demand of the citizen that no class or individual shall be singled out by a false theory of taxation as the bearer of an undue proportion of the burdens of government.

Analyses, Selections, Etc.

Extract of Corpus Luteum in Disturbances of Artificial and Physiologic Menopause.

In an article on the above subject by Dr. W. H. Morley, of Detroit (*Jour. Mich. State Med. Society,* November, 1909), the author reports his results in eighteen cases. This report is a continuation of the one that appeared in the August number of the *Detroit Medical Journal.* The author used an extract made from corpora lutea of beef ovaries, rather than an extract of the entire ovary, as the consensus of opinion seems to be that the internal secretion of the ovary is produced by the yellow body. The extract is given in five-grain doses, three times a day, one-half to one hour before meals. His results in eighteen cases may be summed up as follows:

Five were cured, twelve were improved and one obtained no relief. Included in the twelve cases that were improved are grouped those that are still taking the extract. A permanent cure may result in a few of the cases under treatment. Of the eighteen cases, fourteen suffered from disturbances of operative, or artificial, and four from those of natural or physiologic menopause. While the results obtained in so small a group of cases do not warrant the drawing of any definite conclusions, still the author thinks that the results are favorable enough to justify a continuance of the treatment in other cases, where there is a disturbance incident to artificial or physiologic menopause.

Correspondence.

Sterilization of Rape Fiends.

Mr. Editor:—Comment in one of our daily papers on the failure of electrocution to put a stop to the work of would-be rape fiends, and some literature on the subject of sterilization of Criminals by Dr. Charles V. Carrington, of Richmond, read before the recent session of the Medical Society of Virginia, at Roanoke, prompts me to suggest an idea I have entertained and advocated for a long time.

For attempted rape, I believe sterilization, with a long period of hard labor in the service of the State would be a just and suitable punishment, and far more effectual than electrocution—especially if the criminal is forced to labor in the vicinity of his home, or the vicinity of the scene of his crime. Nothing so impresses the class which supplies this type of criminals as an object lesson.

The result of this operation would make its subject harmless, and he would be a living object lesson—an ever-present reminder to victims of similar impulses—a lesson that all could easily read. A dead man, when consigned to the grave or dissecting hall, is soon forgotten—especially if he is of the lower order. Such a penalty, however, will enable the State to kill the man, but let his body live as a warning.

For the fiend who succeeds in his attempt, I believe the punishment* outlined, while not

*Note by Editor.—In discussing his paper before the State Society, Dr. Carrington disclaimed intention of advocating sterilization of criminals—not of rapists alone—for punishment, but, as he tersely put it, "to stop the breed."

commensurate with the crime itself, will serve to limit such acts more decidedly than death in the electric chair—the penalty in regard to this crime which the law at present provides.

H. B. Mahood, M. D.

Emporia, Va.

Book Notices.

Practical Treatise on Rectal Diseases—their Diagnosis and Treatment by Ambulant Methods. By JACOB DISSINGER ALBRIGHT, M. D. With 32 plates, 4 of which are in colors, and 39 illustrations throughout the text. Published by the author. Philadelphia. 1909. 8vo. 455 pages. Cloth $4; full flexible leather, $5.

One who carefully examines this book will recognize its practical caste and great utility to the general practitioner. It deals, as stated in the title, especially with ambulant cases of rectal diseases. For office operative cases, novocain is especially recommended as the anesthetic—being several times less toxic than cocain—combined with adrenalin. In fact, this combination—novocain and adrenalin—in affording anesthesia has practically revolutionized the practice of proctology. The diseases considered are proctitis, pruritus ani, hemorrhoids, anal fissures, irritable ulcer, ano-rectal ulcer, perineal and peri-rectal abscesses, fistula, prolapse of rectum, rectal stricture, rectal polypus, colitis and sigmoiditis, etc., etc. Technic as to diagnosis and treatment is ample and details of procedures are much aided by the profusion of illustrations. The record as given in the book well sustain the views of the author—that most of the rectal diseases above referred to can be treated as ambulant cases.

Surgical Diagnosis. By EDWARD MARTIN, M. D., Professor of Clinical Surgery, University of Pennsylvania. Illustrated with 445 engravings and 18 plates in colors and monochrome. Lea & Febiger, Philadelphia and New York. 1909. 8vo. 772 pages. Cloth $5.50.

Much space is saved by the systematic arrangement of the book, which does not require many repetitions. The great purpose of the author seems to be to recognize the diseased condition as near its beginning as possible, as it is then that surgery promises the best results. These early conditions usually fall first under the observation of the family physician. Hence this book is invaluable to him, in pointing the direction from which he is to obtain help in treatment—to surgery, in short. The author has called to his assistance in the diagnosis of the surgical diseases of different specialties—such as nervous affections, eye diseases, gynecology, etc., parties already eminent as authors in them. Also special articles are written by Dr. W. T. Longcope, on Laboratory Diagnosis; by Dr. Henry K. Pancoast on X-rays in surgical diagnosis, etc. So that this book must take high rank as one on "Surgical Diagnosis"—useful alike to the student, the general practitioner and to the surgeon.

Editorial.

Standardize Pharmacopoeia.

Representative Coudrey, of Missouri, who has given much time and study to the pure food and drug act, under which hundreds of prosecutions have been instituted by the government, has just introduced in Congress an important amendment to that bill which will prove of vital importance to the physicians as well as druggists of the country.

It provides, among other things, that "the United States government shall edit and publish the United States Pharmacopoeia or National Formulary, and have a complete test for purity and strength of all drugs and chemicals which shall conform in strength, quality or purity to the standard prescribed or indicated for a drug of the same name recognized in the United States Pharmacopoeia or National Formulary; that it shall be made a criminal act if every drug manufactured or sold for the benefit of mankind or animals is not standardized U. S. P.

The medical profession would welcome the passage of such a law, as it would tend to do away with much confusion that now exists regarding the purity and varying strength of numerous drugs now on the market.

The Richmond Academy of Medicine and Surgery

Held its annual meeting in their rooms at the T. P. A. Building, Richmond, Va., on the evening of December 14, 1909. After a very interesting session, in which papers were read and X-ray plates exhibited, the following officers were elected for the new year: Presi-

dent, Dr. Charles R. Robins; Vice-Presidents—Drs. G. P. LaRoque, J. Fulmer Bright, A. G. Brown; Recording Secretary, Dr. Mark W. Peyser; Assistant Secretary, Dr. W. Brownley Foster; Treasurer, Dr. W. A. Shepherd; Librarian, Dr. G. P. LaRoque. The Judiciary Committee is composed of Drs. William S. Gordon, McGuire Newton, J. S. Horsley, D. M. Mann, C. M. Miller and H. M. Taylor. A notable feature of this election is the fact that Dr. Peyser, who was again re-elected as Secretary, is beginning his sixteenth year of service. A Legislative Committee, composed of Drs. John N. Upshur, A. L. Gray and St. George Grinnan, was appointed to co-operate with the Legislative Committee from the Medical Society of Virginia in their work for the repeal of the special license taxes on doctors.

The Constitution and By-Laws were so amended as to admit women physicians into fellowship.

Errata for Dr. Lumsden's Article on Typhoid Fever.

The valuable article by Dr. L. L. Lumsden, of the United States Public Health and Marine Hospital Service, as published in this journal December 10, 1909, is marred by several typographical errors, to some of which we especially call attention. In the third paragraph of the second column, page 385, instead of "comprising," the word *"composing* the American nation" should have been used. Second line of fourth paragraph, same page and column, instead of "or decrepid," the words *"and decrepit"* should have been used. In eleventh line, first column, third paragraph, page 386, instead of the first word, "western," substitute *"northern."* Same page, second column, first paragraph, third line, instead of "bees," insert the word *"flies."* First column, first paragraph, fifth line, page 387, instead of "be," insert *"by."* In fourth paragraph, same column and page, sixth line, instead of "county," substitute *"country* every year." Page 388, second column, last word of third paragraph, instead of "well," substitute *"sick,"* and add, "but frequently will show considerable dilatoriness about doing that which is suggested for the good of the well." Page 391, first column, third line from bottom of fifth paragraph, instead of "Without home support," substitute "Without *some* support." Some other minor errors are noted, but the reader's eye will easily correct them. We would be glad if those who preserve their journals would make the proper corrections in their copies. It is hard to explain how these errors crept in, as the manuscript was typewritten and perfectly clear.

Conference for the Eradication of the Hookworm Disease.

The Atlanta Chamber of Commerce and Georgia State Board of Health have issued invitations to this conference to be held in Atlanta, Ga., January 18 and 19, 1910. The Rockefeller Commission will be represented, and the program will include a number of addresses the first day, and a general discussion of the subject on the second. An effort will be made to form an organization for a campaign against hookworm at this time.

State Care for Maryland Insane.

At a public meeting held in Baltimore, December 9th, the Neurological Section of the Maryland Psychiatric Society and the State Lunacy Commission conjointly promised their best endeavors towards the enactment of a law providing for State care of the insane.

The gathering was composed of many leading physicians and laymen, a number of whom—including several legislators—addressed the meeting and heartily advocated State care for such afflicted unfortunates. The chief address of the occasion was delivered by invited guest, Dr. William F. Drewry, of Petersburg, Va., who, besides giving numerous reasons why the State should care for her insane, further plead for the separation of the criminal insane and epileptics from others, and strongly urged a separate institution for negroes. Among other speakers of prominence were Drs. T. A. Ashby, E. M. Brush, and J. W. Williams.

Virginia passed a law during the last Legislature making it obligatory upon the State to care for her insane without compensation, and we were unaware until this time that such a law did not exist in our sister State. By all means, the demands of humanity call for the enactment of such a law.

Increased Appropriation Asked for by State Board of Health.

The Senate Finance Committee is now in session at Richmond, Va., with a view to determining the needs of State institutions preliminary to the meeting of the Legislature next

month. Among the wants of various departments, we note that Chief Health Commissioner Ennion G. Williams, for the State Department of Health, requests a continuation of the annual appropriation of forty thousand dollars, and, in addition, asks for fifty thousand dollars for buildings and equipment for Catawba Sanatorium, so that the capacity may be increased to 150 patients instead of about 35, as at present.

The Southside Virginia Medical Association

Held its twenty-seventh session in Emporia, Va., December 14, 1909. A program of much scientific interest was presented by members and visiting physicians, Drs. Field, of Norfolk; Murrell and Terrell, of Richmond, and Jarratt, of South Carolina, being among the latter. The following were elected officers for the ensuing year: President, Dr. R. L. Raiford, Sedley; Vice-Presidents—Drs. J. B. Halligan, Smoky Ordinary; E. M. Parker, Emporia; W. T. Moore, Valentines; R. B. Jarratt, Central, S. C.; Secretary and Treasurer, Dr. Emmett F. Reese, Courtland. The next meeting will be held at Suffolk, Va., during March.

Dr. A. Jacobi, New York,

In a communication to several journals, protests against the use of his name as one of the Editorial Council of *Pediatrics*. Dr. Fitch, editor of that journal, misinterpreted Dr. Jacobi's original letter, and makes apology in the December number.

For Sale.—Two thousand dollar practice. No opposition. Large house, suitable for sanitarium, house convalescents or summer boarders, with 25 acres of land and good water; 22½ acres optional. High elevation, good roads, 35 miles from Washington. Bargain if sold at once. For further particulars, address "N. L.," Drawer E, Manassas, Va.

Obituary Record.

Resolutions on Death of Dr. R. W. Fry.

A committee, composed of Dr. Ralph W. Brown, Dr. W. L. Powell, Dr. G. B. Lawson, representing the Roanoke Academy of Medicine, drafted the following resolutions relative to the death of Dr. Fry:

Whereas, God in His infinite wisdom has deemed it wise to remove from our midst one of our beloved members, Dr. R. W. Fry. Therefore, be it

Resolved. 1. That the profession has lost a learned and beloved member.

2. That the citizens of Roanoke will miss a friend who has shown his love for them by his arduous labors for many years as a practicing physician.

3. We recognized in him all those elements which develop the brightest type of physician and gentleman.

4. That we extend our heartfelt sympathies to his widow and other members of his family.

Dr. Frederick Bostock Webb,

Of Roanoke, Va., died December 3, 1909, at a sanatorium near Baltimore, Md., on his forty-third birthday. Dr. Webb was born in England, where he received his academic education, and was graduated in medicine from the University College of Medicine, Richmond, Va., in 1901. He was for a while a missionary to China, and while there married Miss Nellie Van Lear, of Virginia. On returning to this country, he located in Roanoke, at which place he practiced his profession until forced to retire on account of failing health. Dr. Webb was a highly educated man, and held several offices of prominence in his profession. His wife and one child survive him.

Honor Memory of Dr. Webb.

The Roanoke Academy of Medicine has adopted the following resolutions in memory of Dr. F. B. Webb, whose death occurred December 3rd:

Roanoke, Va., December 9, 1909.

The Roanoke Academy of Medicine is again called upon in the providence of God to mourn the loss of one of its members, Dr. F. B. Webb.

Whereas, it appears to our mortal minds that his death was premature, yet we recognize that the Great Physician makes no mistakes.

His life work as a missionary in China, with its privations, is the best index of the motives which actuated his life.

We, therefore, extend our sympathies to his family and relatives.

Ralph W. Brown,
W. L. Powell,
G. B. Lawson,
Committee.

THE
Virginia Medical Semi-Monthly.
(FORMERLY VIRGINIA MEDICAL MONTHLY.)

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Original Communications.

SUTURING OF NERVES.*

By J. SHELTON HORSLEY, M. D., Richmond, Va.
Professor of Principles of Surgery and Clinical Surgery in the Medical College of Virginia; Surgeon to Memorial Hospital.

In favorable cases there is no field that offers such opportunities for brilliant results as surgery of the peripheral nerves. This subject does not always attract the attention of the medical profession as it should and many valuable limbs have been permitted to shrivel up and become permanently useless, when the proper suturing of the injured nerves that caused the paralysis might have restored the function of the arm or leg. Mutilating surgery is often necessary to save life or to relieve pain, and the surgeon and patient naturally congratulate themselves at the successful outcome in such cases. The removal of a diseased appendix, the amputation of an infected leg, the resection of gangrenous intestine are useful and frequently life saving operations when such procedures are demanded by the condition of the patient; but to restore to its original function diseased tissue, to render useful a paralyzed arm, to correct deformities, more nearly approaches the highest ideal of the art and science of surgery.

Plastic surgery and constructive surgery of the nerves require not only skill, but time and patience. Frequently a number of operations has to be performed to secure the proper result. Plastic surgery of the face and constructive surgery of the nerves not only demand care in the technique of the operation, but patience and careful watching are often necessary in the after treatment to an extent that does not occur after other surgical operations. Satisfactory results from nerve suturing are never obtained under several months and frequently not under a year or more, and during this time the patient should be kept under general observation.

Nerve tissue follows the general law we find in both mechanics and biology—that the more complicated a mechanism or a tissue is the more difficult it is to repair. As nerve tissue is a very complex tissue we naturally find repair difficult. In fact so complicated is the process of repair in a nerve that it has never been definitely settled just how it is acomplished, and there are still two schools of pathologists who maintain radically different views in interpreting the process of repair in an injured nerve. There are, however, certain essential facts that are acknowledged by all, for it seems well demonstrated that the cells in the neurilemma have a most important part in the regeneration of nerves, and that nerves without neurilemma and these neurilemma cells, as the optic nerve, do not repair under any condition even though they are surrounded by abundant myelin sheath.

The indications for suturing nerves naturally point to gentleness and accuracy in approximating the nerve stumps and in placing sutures. An abundant incision should be made and the dissection should be kept as dry as possible, for staining of the tissues with blood often obscures portions of the nerve and results in unnecessary traumatism in identifying the nerve itself or its important branches. Strict asepsis is also important, as suppuration after nerve suture either results in total failure or seriously impairs the result. This is as we would expect, for the high grade nervous tissue is more profoundly affected by suppuration and its destructive process than a lower grade simple tissue of higher resistance would be. The nerve trunks should be dissected free with a sharp knife for a sufficient distance to obviate tension when the nerve stumps are brought to-

*Read before the fortieth annual session of the Medical Society of Virginia, held at Roanoke, October 5-8, 1909.

gether. The nerve should either be handled with the fingers, or else forceps should catch its sheath and not the body of the nerve for fear of crushing some of the fibers. If some of the nerve has to be resected a sharp knife should be used and the nerve cut squarely across. The first and most important suture is placed through the center of each stump a short distance from its end. This should be tied so as to bring the stumps in apposition, but without too much tension. Other sutures are placed around the nerve as reinforcing sutures and penetrate the sheath only. In a large nerve, more than one suture may be used to transfix the nerve. For suturing material, I use 20 day chromic cat-gut No. 0. The needle is either a Hagedorn or a fine intestinal needle.

If possible, the line of sutures should be covered with a flap of fascia or muscle to prevent contraction around the sutured area. This procedure, which has been recommended by Murphy, is very valuable.

Suturing of nerves may be divided into, (1st) simple suture, when two ends are approximated; (2nd) flap operation, when a portion of the nerve is split off as a flap in order to bridge over the defect; and (3rd) nerve implantation or grafting of nerves. Sometimes another method is utilized in which a foreign substance, such as a nerve from another animal or strands of catgut, is used with the idea that regenerating nerve fibers follow along this implanted foreign substance. This method should never be resorted to if any other method can be used, as it is unsatisfactory and of doubtful efficiency in most cases.

Aside from the technic, there are other factors that influence the result in suturing a nerve. Nerves regenerate more readily, other things being equal, in a young and healthy individual than in an elderly person of weak constitution. A sharp cut will repair more quickly than a lacerated injury. Certain nerves in the same individual repair more readily than others. Better results may be obtained, for instance, after suture of the musculo-spiral nerve than after suture of the median or ulnar.

As illustrating the simple suture and the satisfactory result that may be obtained under favorable conditions, the following case is reported in which apparently perfect repair took place in a remarkably short space of time.

Mr. A. B., white, aged 30 years, blacksmith, was kindly referred by Dr. C. A. Blanton, of Richmond, Va. Patient was in good health, with no history of previous disease bearing upon the injury. He was industrious and not dissipated. August 3rd, 1908, while forging, a piece of steel broke loose from his hammer and penetrated the lower part of the right arm completely severing the musculo-spiral nerve at this point. Symptoms: Complete paralysis of all extensor muscles on back of forearm supplied by posterior interosseous nerve, giving typical wrist-drop, and abolition of sensation in the skin over the area supplied by the radial nerve.

Operation at Memorial Hospital, August 4, 1908. Under ether, an incision was made in the groove between the brachialis anticus and supinator longus muscles and was continued upward and backward for about four inches. The musculo-spiral nevre was found completely divided. The piece of steel was removed from muscle tissue near the musculo-spiral. The ends of the nerve were cut across with a sharp knife and sutured with chromic cat-gut in the manner indicated above. A piece of muscle was then sutured over the nerve and the wound closed. The arm was put in flexion in a plaster cast. The wound healed primarily. Improvement was gradual, but apparently complete. Six months after operation extension of the right hand was complete and forcible and the area of anesthesia had practically disappeared.

Nerve grafting or implantation may be employed in cases in which so much of the trunks of one nerve has been injured that its ends cannot be approximated. This method is more satisfactory than either the flap operation or attempts to bridge the ends by inserting foreign substances.

The following is a brief abstract of a case which has previously been reported in the *Journal of the A. M. A.*, of March 3, 1906: H. J., aged 21, negro, previous health good. In August, 1903, he was thrown some distance by explosion of a boiler and suffered several injuries. He was unconscious for several hours but on recovering found his right hand and forearm paralyzed. On November 17, 1903, he was referred to me. There was complete paralysis of both sensation and motion in all of the right forearm and hand except in those

muscles and that portion of the skin supplied by the ulnar nerve and a small portion of the skin supplied by the musculo-cutaneous nerve. There was marked atrophy. The first operation was performed November 17, 1903. The median was found crushed and destroyed. It was cut across and implanted into a nick into the ulnar nerve. In January, 1905, the patient returned to the hospital and great improvement was found. A second operation was performed on January 17, 1905. The musculospiral was exposed at the outer side of the elbow and cut across. With a closed hemostat an opening was burrowed beneath the biceps from the lower angle of the incision and the distal end of the musculo-spiral was implanted into a slight nick in the median nerve. The following report was kindly made for me by Dr. Call, Professor of Medicine in the Medical College of Virginia, and is the result of his examinations of the patient November 16 and 17, 1905.

"Extension of forearm good. Flexion of forearm excellent, with slight degree of pronation. With forearm extended, pronation and supination good. Flexion and extension of wrist are both present, extension being the stronger, but both are of good force.

"Phalanges: Flexion of little and ring fingers good, of middle finger less strong. Index finger has less strength than the middle, but all these fingers flex with considerable strength. All the phalanges flex except the first phalanx of the index finger, which has scarcely perceptible motion. Extension of all the phalanges occurs, that of the middle and index fingers being weaker than that of the little and ring.

"Thumb: Slight flexion of terminal phalanx, less marked flexion in the first phalanx. Abduction and adduction both present to slight extent. Very little backward movement. Rotation can not be acomplished. With the hand at rest the thumb is slightly adducted.

"Nerves: Galvanic stimulation of nerves gives the following result: Ulnar, below the point of implantation, gives marked contraction. Stimulation of the median gives marked contraction but weaker than results from stimulation of the ulnar, especially weak in the thumb muscles supplied by the median. Musculo-spiral could not be located at the radial point, though the corresponding nerve on the uninjured side showed marked contraction. Stimulation of area just over the region of posterior interosseous nerve gives marked response in muscles supplied by that nerve, though the contraction of some of these muscles was due to unavoidable direct stimulation of the muscles themselves.

"Stimulation of the ulnar nerve above the implantation gave ulnar and median response, the ulnar group being markedly stronger.

"No anesthesia or paresthesia. Partial cutaneous analgesia was marked on dorsal surface of middle finger. There is marked atrophy in the muscles of right arm, forearm and hand, as compared with the well developed muscular left side.

"The nails on the index and middle fingers show evidence of past trophic disturbances."

When last heard from the patient was doing his regular manual work on a farm making good use of his right hand and forearm.

Unfortunately, we do not obtain such good results in all cases as in these two that have just been reported. Of three cases of suturing of the brachial plexus or its immediate terminal branches, an entirely satisfactory result has only been attained in one instance; in the other two cases slight extension in the area of sensation and a hardly perceptible increase in motion would scarcely justify the term "improvement." In both of these cases, however, conditions were most unsatisfactory, as one patient developed syphilis shortly after the second operation and the other had extensive scar tissue from an old suppuration in the region around the injured nerve.

Nerves may be sutured successfully several years after they have been injured, but the longer reparatory surgery is postponed in such cases, the more imperfect is regeneration and the less likelihood of attaining satisfactory results. Consequently, these cases should not be neglected, but should be operated upon as soon as possible after injury, though where from circumstances prompt suturing has not been possible, the patient should be given the benefit of an operation, even if the injury has existed for several years.

The most delicate stomachs retain and readily absorb *Digalen* ("Roche") when used as a heart tonic.

FRACTURES INVOLVING THE ELBOW JOINT.

By A. R. SHANDS, M. D., Washington, D. C.
Professor of Orthopedic Surgery, George Washington University and the University of Vermont.

My experience in the treatment of fractures of the lower end of the humerus involving the elbow joint has been such as to justify me in saying that it is an accident almost peculiar to childhood; although I am not borne out in this statement by the text-books on fractures, for I have, in looking over the authorities, observed but one who speaks of it in connection with childhood. Dr. Duncan Eve, of Nashville, Tenn., is the only one that I have found that speaks of it in this connection. In his treatise on fractures in the "American Practice of Surgery" he says: "Fractures of the lower end of the humerus are especially frequent in children, in whom they are caused either directly by a fall or a blow on the elbow, or indirectly by a fall on the hand." My experience in treating fractures in children has been that fractures involving the elbow joint have been far more frequent than any other fracture.

It is very surprising how easily a fracture of the lower end of the humerus is produced in a child by a very slight force when it is received in the right direction. Case No. 13

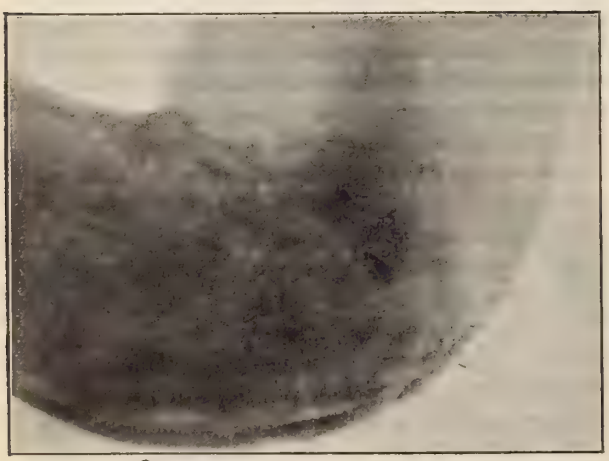

Photo No. V., Case xiii.

herein reported illustrates this point very forcibly, for it was one of the worst comminuted fractures of this variety I have ever had to treat, and was caused by the child falling from a little tricycle—falling a distance of not more than eighteen inches. This was a much worse case than No. 17, which was caused by the child falling from a tree, a distance of eight or ten feet. (See Photo VII).

It is not my purpose to give you an essay on the subject of fractures, but to again urge the operative treatment of fractures involving the elbow joint, especially in children, trusting that the report of my cases will emphasize the importance of this method of treatment. I read a paper on this subject before the Medical Society of Virginia in 1900, reporting cases treated by the operative method with perfect results. It is my purpose now to add to that report a report of the cases treated by me by the same method since that time.

I became convinced in 1896 that one was not justified in adhering to the older methods of treating fractures by manipulations and splints alone. That method did not appeal to me, and I at that time began to operate on all cases in which the X-ray showed that the fragments were not properly reduced by manipulations. The older writers on this subject always advised that a fractured elbow should be put up in a right-angled splint, expecting the result to be an ankylosed joint; any other result was a surprise, and when a movable joint was obtained in one of these cases, it was usually accompanied with a very marked deformity. Some advised using no splint at all so that passive motion would be constant, hoping that a movable joint would be obtained, regardless of the amount of deformity. Dr. Agnew says that complete reduction is rarely obtained, and that ankylosis of the joint may be looked for, not only from the involvement of the joint, but from the inflammatory deposit about the origin of the pronator and flexor muscles of the forearm. He also advised the use of right-angled splints that the arm may be of greater use in case of an ankylosed joint.

I have recently reviewed many of the standard surgical text-books of the very latest issue, and have found only one reference to the operative treatment of fractured elbows. This was by Wilms in Von Bergman's Surgery. He gives a most exhaustive treatise on the subject of fractured elbows, and gives in detail an account of the many classifications of the different fractures involving the elbow joint. In his closing paragraph he says that the question

of operative interference usually arises after recovery in the cases in which expectant treatment—meaning failure to reduce displacement of the fragments—has produced marked functional disturbance.

It is very evident that the operative treatment of these fratures is not practiced extensively, if at all, in Germany; for Wilms says in the same paragraph above quoted from that at the present time there is no doubt that the relatively slight danger of operations upon the joints and the possibility of obtaining accurate information with the X-ray of the condition present will lead to greater developments in this field. These quotations are from Von Bergman's Surgery published in 1904.

As stated above, I began in 1896 to operate on all of my cases of fracture in which the X-ray showed that the fragments of broken bone had not been properly reduced by manipulation.

The most important point in the treatment of these cases is an accurate knowledge of the position of the fragments of the broken bone. For obtaining this we have in the X-ray all that can be desired, and its aid should be had in every case where the least doubt exists. I would urge that when the X-ray is not available, all of the doubtful cases be operated on that there should be no doubt about the position of the fragments. When the proper diagnosis is made the treatment is perfectly plain. The broken ends should be put in the best possible position and held there until union is firm. This can be readily accomplished through a small incision after which the arm should be put up in a plaster of Paris splint with the forearm flexed to an acute angle on the arm. There are but very few cases in which the fragments will not remain in perfect position with the forearm acutely flexed—the so-called Jones' position—without suture of any kind. The supra-condyloid fractures where the line of fracture is oblique will present some difficulty in keeping the fragments in position. In this class of cases it has been my custom all along to insert a drill at a right angle to the line of fracture through the broken fragments and to leave it in for about two weeks. When I have done this I feel perfectly sure that there is going to be no slipping of the fragments, however oblique the fracture may be. To my mind this is an ideal method of holding these fragments in position, and can be done with the greatest ease as compared with inserting silver wire, and taking but a few minutes to do it. I use a drill that is long enough to project through the dressing, including the plaster of Paris. The little wound is closed tightly around the drill. (See Photo No. 1.)

Photo No. I., Case iv.—Photo taken through plaster of Paris dressing showing drill in position.

I remove the plaster of Paris at the end of three weeks, when passive motion and massage are begun, giving it daily for the first few days, and then twice and three times a week through the fifth and sixth weeks. I have pursued this plan in practically every one of my twenty cases, and I take no little pride in stating that I have obtained a *perfect functional result in every case.*

In the non-operative cases it is very important in putting the plaster of Paris on to bear in mind what Allis described in 1880 as the "carrying function"—*i. e.*, the outward deflection of the forearm. This position is assured in the operative cases when the fragments have been replaced in normal relation to the shaft of the humerus.

My experience has convinced me that this open method of treating fractures is the correct one, and that the sooner it is generally adopted, the fewer stiff and deformed elbows we will meet with. The operative method requires but little, if any, more time than is required in the efforts at manipulating the bones into the proper position, and with manipulation

one can never be sure that they are in proper position or that they are to remain there, whereas when one has cut down on them and secured them in position there is a very comfortable feeling that all is going to be well. The same amount of anesthesia that is needed for manipulations will suffice for the operative measures; hence the operation under antiseptic precautions adds nothing to the risk of the patient and insures perfect results.

Of course, one wants to give his patient every chance that is in his favor to get the best functional result. It has been abundantly proven to me that that is in the operative method. As has been said in my paper above referred to, "Why should one hesitate a moment in these days of antiseptic surgery to cut down on fractured bones to satisfy himself with absolute certainty as to the position of the broken bones?" Surely he should not, when the abdominal surgeon is daily opening abdomens for the purpose of exploration. In other words, all simple fractures, with displacements that cannot be easily reduced so as to obtain perfect approximation, should be converted into compound fractures with the knife under the best antiseptic precautions. In doing this nothing is added to the severity of the case; in fact, just the opposite is the case, for by so doing, blood clot and effusion are removed, which surely puts the tissues in better condition to bring about repair. This method gives the surgeon a perfectly clear field of operation and enables him to reduce the fracture to a mathematical precision. If this were done in all cases involving the elbow joint, stiff and deformed elbows would be a thing of the past.

I do not intend to say that it is absolutely necessary to adopt the operative method in every case of fracture about the elbow, for there are cases where the displacement is so slight that it will not interfere with obtaining a perfect result, and there are even cases where there is no displacement at all. These cases, of course, do not need such radical treatment; but when the fractures are oblique or transverse with much displacement, the patient is not given the best chance of a perfect recovery without such procedure is instituted.

Ischemic Paralysis.—Before giving a report of the cases illustrating my views as set forth in this rather desultory paper, I wish to mention what might well be considered the most unfortunate result that not infrequently follows a severe fracture involving the elbow joint—viz., *ischemic paralysis.*

Wilms, in his treatise on fractured elbws in Von Bergman's Surgery, above quoted from, warns one about constrictions about the elbow from tight splints, which will produce stasis and insufficient nourishment leading to destruction of muscles, thus causing myogenic contractures, and subsequently to the so-called ischæmic contractures.

Any one especially interested in the subject of ischæmic paralysis will find that Powers, of Denver, Col., has published in the *Journal of the American Medical Association* of March 2, 1907, a most exhaustive review of the literature on the subject. Therein he has compiled from different sources a report of fifty-two cases following fractures. Of the fifty-two cases all but two were in the upper extremity. Twenty-one of the fifty-two cases were from fractures involving the elbow joint.

I will report three cases of ischæmic paralysis that have come under my observation. Each of these cases was left with a perfectly useless arm from a fractured elbow. The picture given of Case No. 22 is a perfect picture of the other two cases so far as the arm is concerned.

Surely these cases should impress upon all of us the great importance of the proper treatment of such cases of fractures as have been considered in this paper.

Case I.—Aged 9 years. Supra-condyloid fracture of the humerus. Operated on with a perfect result and reported in a paper by the writer "Illustrating the Value of the X-ray in the Treatment of Fractures of the Long Bones," published in the *Medical Register,* December, 1898.

Case II.—Aged 3 years. Oblique fracture of the condyles of the humerus into the joint with marked displacement of the fragments. Operated on with a perfect functional result. This case was reported in a paper by the writer entitled "The Treatment of Supra-Condyloid Fractures of the Humerus." Published in the *New York Medical Journal* for December 22, 1900.

Case III.—Aged 7 years. Comminuted fracture of the condyles of the humerus. Operated on with perfect result. This case was included

in same report as Case No. 2. (See Photo No. 2.)

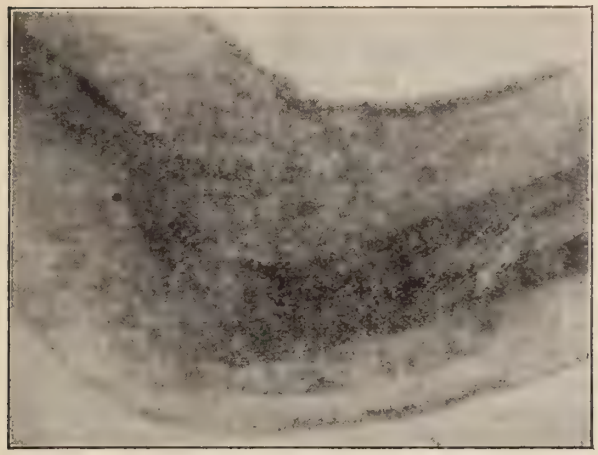

Photo No. II., Case iii.—Showing fragments of the condyles displaced laterally and behind end of the humerus. Photo taken through plaster of Paris splint.

Case IV.—Aged 6 years. *Compound fracture* through the condyles into the joint. Also operated on with perfect functional result and reported in the same paper as Nos. 2 and 3.

Case V.—Aged 8 years. Seen in consultation one week after the accident. Diagnosis, supra-condyloid fracture of the humerus. The fracture was reduced under ether and put up in a plaster of Paris splint with the forearm at an acute angle on the arm under ether. X-ray taken through the plaster showed the fragments to be in good position. Plaster removed at the end of three weeks, when passive motion and massage were begun and continued for three weeks. Result was perfect functionally.

Case VI.—Aged 12 years. Referred to me six months after the accident. The X-ray did not reveal anything definite at the time he came under my care. He had practically an ankylosed joint, there being probably five or six degrees of passive motion. He had been treated with a right-angled splint.

The joint was opened when it was seen that the condyles had been broken, and whatever displacement there was at the time of the fracture had been reduced when the fracture was set. The ankylosis was caused by a fracture of the coronoid process of the ulna which was displaced, and the resulting callus and the displaced fragment completely choked the joint. The operation consisted of removing the fragment of the bone with all of the callus, after which periosteum was brought over the bare bony surfaces. The arm was then forced into an acute angle and put up in plaster of Paris. As soon as the wound was healed—about ten days—the plaster was removed and passive motion was begun and kept up for four or five weeks. Voluntary motion was very slow in being restored, but continued to increase for about a year. The final result was very satisfactory as to motion, but there was some distortion of the joint.

This case illustrates especially well what could have been prevented by an early operation, which would have been very easy and simple, and would have given a perfect result in a few months; whereas, after a delay of six months the operation was quite a tedious one, followed by a slow recovery—twelve months—making eighteen months from time of the accident to complete recovery.

Case VII.—Aged 50 years. Referred to me twelve months after the accident, which had caused a fracture through the external condyle into the joint. The X-ray, taken twelve months after the accident, did not show anything very clearly except that there was a lateral dislocation of the joint away from the external condyle, which shows a very irregular outline and much new bone thereabouts. Examination showed an ankylosed elbow joint with about twenty degrees of flexion of the forearm.

The joint was opened through a lateral incision of about two inches over both the external and internal condyles. A modified excision of the elbow was done by removing enough bone through both condyles to allow the dislocation to be reduced and at the same time to allow the arm to be flexed to an acute angle. Periosteum and soft tissues were brought over the denuded bony surfaces to prevent bony ankylosis again recurring. Passive motion was begun at the end of a week under chloroform anesthesia, which process was done twice a week for three weeks. At this time the patient left the hospital for the country but was instructed to have vigorous passive motion continued without the chloroform. This patient continued to improve very satisfactorily for about a year. The final result was very good, but not a perfect joint, by any means; she has about two thirds of the normal range of motion.

This case, as well as No. 6, illustrates what could have been saved by an early operation, and would have gotten well with a much better result in a few months. As it was, she was over two years in regaining good use of her arm.

Case VIII.—Aged 6 years. This case came under my care three weeks after the accident. The fracture was supposed to have been reduced immediately after the accident. This was a mistake, as is well shown by the X-ray taken at the time I saw him. (See Photo 3.)

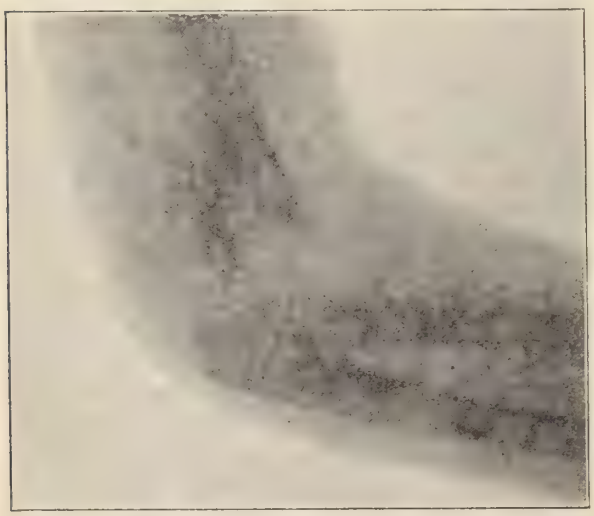

Photo No. III., Case viii.

The X-ray shows tihs to be an oblique fracture through the condyles into the joint.

Under chloroform anesthesia I succeeded in reducing this fracture without opening the joint, although it was done three weeks after the accident, X-ray being used to establish this fact. The arm was put up in a plaster of Paris splint acutely flexed. Final result was perfect functionally.

Case IX.—Aged 7 years. This case came under my care the day of the accident. Upon examination I found that there was a supra-condyloid fracture with the condyles turned backwards to a right angle to the shaft of the humerus. As it was not convenient to have an X-ray made I operated at once, and replaced the condyles and secured them in place by passing a drill through at a right angle to the line of fracture. The drill was left in for two weeks, as is my usual custom. The limb was put up in plaster of Paris acutely flexed; the plaster was removed at the end of three weeks, when gentle passive motion was begun. The result was all that could possibly have been desired.

Case X.—Aged 7 years. This patient was seen by me in consultation within a few hours after the accident. Diagnosis was made very easily, as there was no swelling at the time. The fracture was obliquely through the condyles into the joint. (See Photo No.4.) This picture was taken after the first attempt at reduction under chloroform; as it showed the condyles not to be in a satisfactory position, a second attempt at reduction was made with success, as was shown by a fluoroscopic examination. The arm was then put up in plaster of Paris in the acutely flexed position.

Plaster of Paris splint was removed in three weeks, followed by the usual passive motion. The result was a perfect one in every respect.

Case XI.—Aged 7 years. Seen in consultation within a few hours after the accident. Diagnosis of a supra-condyloid fracture of the humerus was made. The child was at once chloroformed, which enabled me to very easily reduce the fracture. Arm was put up in plaster of Paris in an acutely flexed position. The plaster was removed at the end of three weeks, when it was discovered that there was some deformity of the elbow, due to the lateral slipping of the fragments after the plaster of Paris had been applied, but as this did not bid

Photo No. IV., Case x.

fair to interfere with the function of the joint, and was not very disfiguring, no attempt was made to remedy it. The ultimate result in the case was perfectly satisfactory.

Case XII.—Aged 4 years. Diagnosis: Supra-condyloid fracture of the humerus. This fracture was easily reduced under chloro-

form anesthesia without operation. The limb was put up in a plaster of Paris splint in an acute flexion. The plaster was removed at the usual time—three weeks. The final result was perfect in every respect.

Case XIII.—Aged 5 years. I saw this case within an hour after the accident, which was caused by the child falling from a little tricycle, falling a distance of not more than eighteen inches. Diagnosis was made of a supra-condyloid fracture of the humerus. The displacement of condyles was extreme, for they were turned backwards at a right angle to the shaft of the humerus; the spur end of the humerus was prtruding through the skin on the anterior aspect of the arm just above the joint. The fracture was reduced under chloroform at once, or rather was thought to have been reduced, but in this I was mistaken, as the X-ray the following day showed the condition of affairs as shown in the accompanying photograph. (See Photo No. 5.)

Four days later I opened the joint through an incision just over the external condyle and very easily replaced the fragments in a normal relation to each other. When the arm was forced into acute flexion it was seen that the fragments needed nothing but the pressure from this position to hold them there.

The plaster was removed at the end of three weeks and passive motion begun. The final result was a perfectly normal joint in every respect.

Case XIV.—Aged 8 years. Diagnosis of fracture of the external epicondyle with a partial lateral dislocation.

This case came under my care seven days after the accident, and after several attempts had been made by the family physician to reduce the fracture. Under chloroform I succeeded easily in forcing the broken bone back into position and after reducing the partial dislocation I put the limb up in plaster of Paris in an acutely flexed position. The usual after treatment was carried out with a perfectly satisfactory result.

Case XV.—Aged 4 years. Supra-condyloid fracture of the humerus with but little displacement. Under chloroform the arm was forced into acute flexion and put up in plaster of Paris. With the usual treatment a perfect result in every particular resulted.

Case XVI.—Aged 15 years. This was a case of fracture of the lower end of the humerus about one inch above the condyle. The fracture was very oblique, but was easily held in position. This case does not come, strictly speaking, within the scope of this paper, as it is intended to confine the cases to those involving the elbow joint. My object in including this case is on account of the age of the patient, for I believe that the older the child is, the less likely is the joint to be involved in a fracture of the lower end of the humerus that is produced by force received on the hand forcing the forearm backwards. This is the way the force is applied that causes fractures of the condyles in the great majority of cases. This boy fell off a fence about five fet high, falling on an outstretched arm in his effort to protect himself.

The fracture was reduced under chloroform anesthesia, and put up in plaster of Paris, which was removed in five weeks. The result was perfectly satisfactory.

Case XVII.—Aged 6 years. This case I saw in a few hours after the accident. Diagnosis: Supra-condyloid fracture of the humerus with lateral and backward displacement of the fragments. (See photographs Nos. 6 and 7.) The X-rays were taken after the usual manipulations had been used to reduce

Photo No. VI., Case xvii.

the fractures, but as the fragments were not at all in a satisfactory position, operation was done in the usual way. A drill was inserted

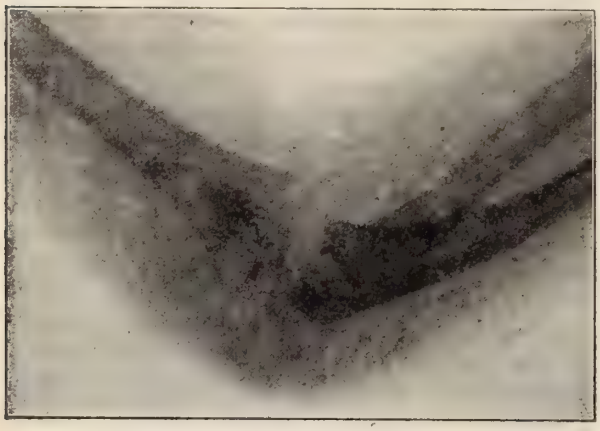

Photo No. VII., Case xvii.

through the condyles into the shaft of the humerus which held the bones in good apposition. The drill was removed at the end of two weeks. This case is still under observation, as it has only been a short time since it was operated on, but I have no reason to think that it is not going to be perfectly satisfactory.

Case XVIII.—Aged 3 years. Diagnosis: Supra-condyloid fracture of the humerus. This case presented nothing of especial interest, as there was not much displacement of the fragments, and gave a perfect result with the usual non-operative treatment.

Case XIX.—Aged 4 years: Diagnosis: Supra-condyloid fracture of the humerus. This case was seen within a few hours after the accident was received. Under chloroform anesthesia the fracture was reduced at once and the limb put up in plaster of Paris acutely flexed. With the usual after treatment a perfectly satisfactory result followed.

Case XX.—Aged 5 years. Diagnosis: Fracture through the condyles of the humerus. Fragments were displaced backward and outward. (See Photo No. 8.)

This case was seen in consultation within a few hours after the accident, which consisted of the child falling off a porch about three feet from the ground.

Treatment: The day following the accident, through an incision two inches long, the fracture was easily perfectly reduced, and as the fragments remained in perfect position by acutely flexing the forearm on the arm, no spike was used. The limb was put up in a plaster of Paris cast in the position of acute flexion. The plaster was removed in three weeks when passive motion and massage were begun, which was continued for two weeks, the limb being protected with an ordinary roller bandage in the mean time. At the end of the fifth week all dressings were left off.

The result in this case was also perfectly satisfactory in every respect.

In conclusion, I wish to report briefly three cases of *ischemic paralysis* of the forearm following fractures of the lower end of the humerus involving the elbow joint. My object in mentioning these cases is to enforce what I have above said of the importance of the early operative treatment of severe cases of fracture of the elbow.

Case XXI.—Aged 6 years. Came under my care at my clinic at the Mary Fletcher Hospital, Burlington, Vt., about six months after

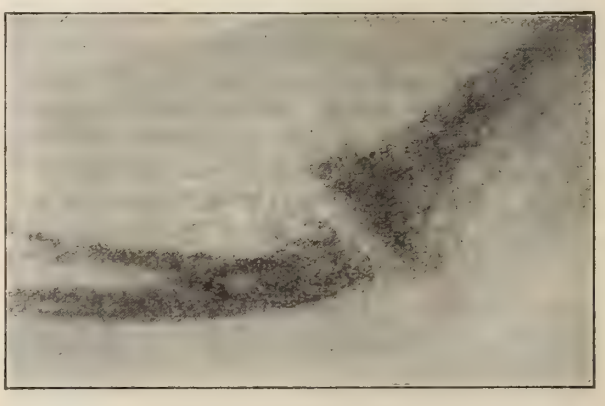

Photo No. VIII., Case xx.

having received a fracture of the elbow joint. His elbow joint was perfectly ankylosed at a slight obtuse angle; the hand a typical claw-hand with wrist-drop. There was absolutely no voluntary motion of any of the fingers or wrist; in other words, the hand was almost perfectly useless.

Later on this child was brought to me in this city and was under my care for about three months. Through an incision just to the outer side of the olecranon I exposed the ulnar nerve, hoping that I might find a condition of the nerves supplying the forearm that would account for the paralysis. The nerve was perfectly normal in its appearance; so this gave me no clue to the trouble in that direction;

hence I was forced to accept the diagnosis of ischæmic paralysis. I gave the child a pretty thorough course of passive motion, exercises under chloroform twice a week for about two months, and at the same time had the arm treated with massage by a very competent masseuse. After all of my efforts I could not convince myself that I had benefited the child in the least.

Case XXII.—Was in a child that was 7 years old that was brought to me from a neighboring State about three months after receiving a fracture of the elbow which had been treated with right-angled splints. The arm was exactly in the condition of the case above described. (Photo No. 9.)

Photo No. IX., Case xxii.

I also operated on this child by exposing the ulnar nerve, but found nothing to lead me to believe that the arm had been rendered helpless by any injury to the nerves supplying the forearm, so sent the child home with directions to use massage and passive motion.

Case XXIII.—Was recently seen in consultation in this city and has exactly the same history as Nos. 2 and 3.

BORDERLINE PHTHISIS.

By CHARLES F. BEESON, M. D., Roswell, New Mex.

There is a period in the development of pulmonary tuberculosis in which the symptoms are extremely uncertain. There are many cases which, if recognized in the very early stage, might recover with scarcely the knowledge that they were ever afflicted with the disease. This, no doubt, does occur. It will occur more often if the condition is recognized and the proper steps taken to place the patient in the most suitable condition to combat the disease.

Pulmonary tuberculosis is a disease, the incipiency of which is of necessity slow, but which after a time may either become rapid or continue in a chronic progressive course covering a considerable period of time. It is believed that the majority of primary infections gain entry by way of the respiratory tract. A careful study of the physiology of respiration and of the histology of the lung will convince one of the difficulties which beset the entrance and lodgment of the bacillus and should demonstrate to the most skeptical that in all probability one germ only, or at most a single isolated colony primarily reaches the termini of the ciliated tubes, the entrance to the unprotected walls of the alveoli.

It requires from three to six weeks for the first tubercle to form. This tubercle must break down and infiltrate its microscopic neighborhood, which in turn must pass through the same cycle of development, finally reaching by extension a state of magnitude sufficient to alter the local structures and systemic functions. Knowing this we can appreciate the words of Professor Cornet, of Berlin, when he says that the very earliest period at which physical signs become known to us is from six months to one and a half years after the implantation of the germ.

I desire to call attention to an early, if not a primary, period in the development of this disease—one of latency which merges insensibly from a state of health into one of recognized disease. The phthisical habit is to be recognized in a person who is tall, delicately built, with oval face, clear skin, blue eyes, long eye lashes, drooping shoulders, winged scapulæ, sunken chest, prominent clavicles and with ribs markedly slanting from behind forward, thin hands with in-curved nails. An almost oppo-

site condition—viz., the dark-skinned, raw-boned, thick-lipped type, has been associated with this disease. In all probability this is the result of a disproportionate make up of the vital organs and a disturbance of that equilibrium which should exist between them, perhaps an arrested development in some of them. Sooner or later such an individual may fall a victim to this disease. In such a person the chest measurements will be found to be less than thirty-five inches. By dividing the number of pounds weight by the number of feet in height we will have in the result the so-called corpulence, and if the result falls below twenty-one it is very inauspicious.

Often there is an undersized heart, with a relatively lessened arterial blood pressure. The skin of the body becomes a marble white, and often areas of brown pigmentation, the so-called "liver spots," may be seen. A close observer may note that the eyes are too bright and that perhaps one pupil is larger than its fellow at times, due to an irritation of the ciliary nerve through the cervical sympathetic from slight changes in one apex. The lips may show a bluish tinge from deficient oxygenation, or the margin of the gums show an unusual redness. One cheek will often show a transient flush and with remarkable frequency occurring on the same side as the lesion. The hair becomes brittle and the moustache droopy. The appetite is variable and uncertain, a vague nausea at the sight of food being often present and at his meals the patient will often push aside the meat, nibble at it or avoid it altogether. Decided variations in appearance may be noticeable from day to day, more especially with the changes of the weather. The weight may fluctuate, or there may be a gradual loss thereof, the flesh becoming flabby. The person fatigues easily, becomes tired and languid; this with or without an afternoon fever may be the only symptom for months. The breath seems to have become shorter and he cannot do the work he formerly could. The temperature will be found to fluctuate greatly, often subnormal during mornings, and with or without an afternoon rise, the thermometer registering slowly, often requiring from five to ten minutes to reach a half degree.

Pains in the chest are not to be ignored. They may radiate to the shoulder and arm of the affected side; the angle of the scapula is a favorite site. A vague sensation is nearly always present in an affected apex. The patient clears his throat frequently, the voice is often weak and sometimes husky, and a single expiratory cough seems to relieve a vague irritation somewhere, though a careful examination of the chest may reveal no abnormal sounds.

A weakened respiratory murmur in one or both lungs would be suggestive and on full expiration a rumbling noise is often heard at the end of the act, as if the lung had been lying dormant and was just opening up. A single cough often follows this inspiration if deep and a single crepitant rale may sometimes be heard at the end of it.

Careful inspection may reveal deficient expansion at one apex, or the Litten shadow may not fall as it should. Owing to the loss of the normal elasticity of the lung tissue from a slight congestion of the parenchyma in the disease area, the latter part of the expiratory effort becomes audible, producing a prolonged expiration in the same region. The same changes would produce an impaired resonance at this point. A positive tuberculo-cutaneous or the ophthalmo reaction will make the diagnosis practically certain.

Sooner or later a slight hemorrhange will startle the patient, or a protracted "cold" will harass him for weeks (a la grippe that won't let up). From this event the beginning of pulmonary tuberculosis is usually dated by the layman and only too often by the physician himself. In reality this is only the announcement that either a congested tubercular area has leaked blood or that a tuberculous focus has caseated and scattered, throwing toxines and bacilli into the surrounding tissues. From the effects of this caseated material there will soon be positive signs of an active inflammatory congestion extending much wider, however, than the actual focus of the disease. The bacillus will usually show in the sputum at this time.

The ultimate outcome will usually depend upon the virulence of the poison and the vulnerability of the tissues, whether it will be phthisis florida or the chronic ulcerative form.

Cactina pillets have proven a valuable aid in cardiac therapy.

FRACTURE—DISLOCATION OF THE SPINE, WITH REPORT OF A CASE.*

By H. STUART MacLEAN, M. D., Richmond, Va.
Visiting Surgeon Virginia Hospital, City Hospital, Etc.

Cases of fracture dislocation are of such infrequent occurrence and of so serious a nature as to prompt the report of one case which has recently come under the care of the writer.

Fractures of the vertebral body are usually due to violence acting in the long axis of the spinal column, combined with an arching or bending of the spine. The vertebral body may be crushed or mashed, or fragments of the body may be splintered off, usually from the upper auterior border and, as a rule, wedge-like in shape. Fractures of the spinous processes or arches are produced by direct violence and while they may not produce the characteristic kyphotic deformity of a fracture of the body, they are apt to present a more extensive bone injury and resultant damage to the cord. Fractures of the body occur usually in the lower dorsal or lumbar regions where the bone is large, thick and of softer or more spongy consistency. Fractures of the spinous processes and arch may occur at any point of the spine, depending upon and corresponding to the site of violence. They are liable to work greater damage to the cord on account of the fact that the injury to the bone may be more extensive and the fragments of the broken arch forced in against the cord, tearing the membranes and crushing the contents. Localization of a fracture is done by noting the site of the deformity, palpation and a study of the symptoms of cord pressure. As a rule, sensory and motor disturbances will manifest themselves along the distribution of the first and second nerves of exit below the point of injury. Loss of sensation deepens as we pass downward over the body, sometimes becoming complete only as low down as the third nerve below the point of injury (particularly in injuries of the lower dorsal region).

Dislocation accompanying fracture occurs in cases of direct violence. It occurs more frequently in the cervical and upper dorsal regions and may be partial or complete, lateral or anterior, posterior. The partial, or dislocation of the articulation on one side is less liable to do serious damage to the cord, although equally serious conditions may be produced by accompanying hemorrhage into the cord. Following is a record of the case referred to:

On July 14, 1909, R. N., age 34, received an electric shock while climbing a telephone pole in Petersburg, Va., and fell a distance of eighteen or twenty feet to the street, striking his back on the edge of the curbstone. Complete loss of motion and sensation from the waist down was immediate, together with severe pains up and down his back. He was carried to the hospital, where I saw him a few hours later with his physician, Dr. John G. Rennie. He had complete loss of sensation from a line encircling the abdomen on a level with the iliac crests, complete loss of control of both bladder and rectum and loss of motion in both legs. The reflexes were abolished. Patient was considerably shocked; pulse 110; respirations 44. There was a marked depression over the eighth and ninth dorsal vertebræ with crepitus of their spinous processes. An operation was immediately done, as follows:

A four-inch incision over the site of the injury exposed the spinous processes and it was found that the eighth and ninth were crushed and the tip of the seventh broken off. Upon removing them the arch of the ninth vertebra was found to be crushed and driven in on the spinal canal, while the eighth arch was fissured. Both arches were removed and the cord exposed. The cord was brushed or compressed at the point of pressure from the ninth arch, but not divided. The superior articular processes of the tenth vertebra showed clear and glistening, and upon investigation it was seen that the ninth vertebra had been dislocated forward, the inferior articular processes of the ninth vertebra "jumping" or sliding over the superior of the tenth. To reduce the dislocation a Carmalt artery forceps was introduced just beneath the arch of the seventh vertebra and, using a chisel placed across the wound below the ninth vertebra as a fulcrum, with the patient's shoulders pulled well forward, the displaced vertebra was lifted back into position, snapping back and locking firmly. A probe was passed up and down the spinal canal for some distance to be sure there was no further obstruction and the wound then closed, the muscular structure being drained with a few strands of twisted silkworm gut.

On account of the firmness with which the bones came together it was considered safe to

*Read before the Medical Society of Virginia, Roanoke, Va., October 5-8, 1909.

dispense with any fixation dressings, other than ample applications of adhesive plaster applied to limit bending of the spine, as it was feared that the handling necessary to apply a plaster cast might reproduce the dislocation.

On August 1st it was found that a partial dislocation of the right articular processes between the ninth and tenth vertebræ had occurred while the patient was being shifted; so an incision was made and the deformity corrected. There had been no change in his condition up to that time, but it was evident that the slipping of the joint had not done any damage, as the removal of the eighth and ninth arches precluded a renewal of the pressure. After the second operation the patient was strapped to a well-padded board splint, fitted to his back, with an opening in the center to allow the wound to be dressed. This splint was kept on for three weeks, during which time the patient was kept on his face on an air mattress. Throughout August the patient had involuntary reflex jerking movements of his legs, due to stimulation of the spinal centers, but no voluntary motion and no return of sensation. He developed the usual cystitis with temperature, but this has been kept well under control by daily irrigation with boracic acid solution.

About September 1st the patient began to regain some voluntary movements of the legs, particularly the right one, and there was a noticeable improvement in the tonicity of the bladder and the retention of urine. As yet there has been little or no evidence of improving sensation, but on October 7th Dr. Rennie reported to me that there was decided improvement in the voluntary movements of the limbs. The patient's general condition is encouraging. The temperature, due to the cystitis, is subsiding, his limbs show less atrophy than was expected, and under the influence of daily alcohol and olive oil rubs are now even putting on flesh. There are no evidences of diminished resistance and nourishment in the way of gangrene or trophic sores, or even irritation of the skin of the affected limbs. There was one bed sore over the lumbar region which came from pressure of the back splint applied after the second operation, but this has steadily improved and is about healed.

Of course, the prognosis is grave as to the outcome, even as yet, but the fact that there has been material improvement gives us reason to hope for more of it, as it is known that these cases at times make very slow progress, yet finally recover.

The question most frequently raised in these cases is whether or not to operate. Non-operative treatment of the fractures and manipulation of the dislocation have their advocates and they quote statistics in their favor. But the fact remains that in any case of fracture with partial or complete paralysis, the extent of damage is so uncertain as to justify operative intervention to clear up the obscurity and afford an opportunity to remedy the harm done. It should also be borne in mind that in fracture-dislocation the danger from attempts to reduce by manipulation is far greater than from the open operation. Certainly, in the case reported, nothing would have been gained by expectant treatment with the existing pressure on the cord, nor would I have been willing to attempt reduction by manipulation under the circumstances. One unusual feature in the progress of this case is the marked improvement in motor symptoms with little or no sensory improvement. This can only be explained on the ground that the injury to the cord by pressure of the crushed ninth arch did most damage to the posterior columns.

The question occurs as to this man's condition in the event of restoration of the functions of the cord. There probably will be a weakened condition of the vertebral column, owing to the loss of the spines and arches and the supporting supra- and infra-spinous ligaments and ligamenta flavæ, but it is hoped that connective tissue development, with the added strength of the muscles which were brought into the wound from each side to fill up the gap, will provide a reasonable substitute for this loss. Further than that, the question resolves itself into the application of an appropriate brace, if one is necessary. A large share of the credit for the favorable progress of the case must be given to Dr. Rennie, whose faithful and untiring attendance upon the patient has warded off these unfortunate sequelæ which so frequently terminate these cases.

The case is reported because of the extensive damage done by the accident, the complicating dislocation, the great lapse of time before evidences of recovery appeared, the marked

motor improvement in advance of sensory improvement and the recent satisfactory progress of the case.

I hope to report further on the case at the next meeting of the society.

THE TREATMENT OF TYPHOID FEVER IN PRIVATE PRACTICE.*

By L. H. PATE, M. D., Lake Arthur, N. M.

The subject chosen for this paper is one that has been discussed, pro and con, since Louis, of Paris, in 1820, first emphasized a number of its cardinal points, and Gerhardt, of Philadelphia, in 1837, under the guidance of Louis, proved the disease to be a separate entity.

The treatment of typhoid fever in private practice is ever an interesting subject to the physician—one which, I dare say, has caused as much study as any of the infectious diseases—so much, indeed, that it would require volumes to record all that has been written concerning it. Still its successful treatment is a subject that is well worthy the best efforts of our more skilled men.

It is not my purpose in this brief paper to discuss at length the treatment of typhoid fever in its many complicated forms, but rather to give the method of treatment which has proven most successful in the hands of the writer as a private practitioner, and under circumstances which preclude the use of hospital advantages, and where properly trained nursing is not to be obtained. Under these conditions a very large per cent. of typhoid fever must be treated.

The following is the plan pursued by the writer:

Medicines. Drugs are not to be employed if they can be avoided—that is, they are not to be used unless they are certainly indicated. The antipyretic drugs are particularly harmful if their use is resorted to simultaneously with bathing. Their only use in a case that can be properly nursed and bathed is for the purpose of relieving headache and backache, when they may be given in small doses, such as acetanlid in two-grain doses three or four times a day.

As soon as the patient comes under observation, calomel is given, one to two grains in quarter grain doses every hour. If his bowels are not moved in ten to twelve hours, a movement is produced by the aid of a rectal injection of soap and water, or a saline laxative. Calomel is then continued throughout the disease in tenth or twelfth grain doses every two to six hours to meet the requirements of the individual case. Calomel is given in preference to any other purgative for the reason that it not only acts as a laxative, but is one of our best intestinal antiseptics as well. Its laxative effects on the bowels greatly aid the elimination of effete material and fowl-smelling stools, while its action through the blood combats the infection and prevents to a great extent relapses or reinfections. Also, the calomel exerts a beneficial influence on the liver, which is often sluggish or inactive in this disease.

Hydrochloric, or sulphurous acid, combined with the essence of pepsin, is given every six hours after food, and is usually continued throughout the disease, because of the benefit to the stomach in aiding digestion and preventing to a great extent the formation of gases of fermentation.

Stimulants. Stimulants are to be used only when the pulse is weak and the cardiac first sound is beginning to become feeble. The best of these is whiskey or brandy diluted and given in half ounce doses every three to four hours, as required. Many cases do better without stimulation, while others need larger doses of alcohol than those just named. Hoffman's anodyne in drachm doses every two to three hours when the condition of the heart is desperate is valuable. Strychnine is also to be used, but it is not best to use it as a routine, but only when indicated and for a few doses only.

Antiseptics. Absolute intestinal antisepsis cannot be produced by any known means, although by the use of proper remedies we are able to materially modify the growth of the microörganisms. If the physician thinks by their use he destroys the bacillus typhosis and so benefits his patient he is largely in error and his use of them is not rational, because the bacillus in the early stages is not free in the bowel, and in the later stages is distributed in every part of the body. If, on the other hand, these remedies are given to combat intestinal fermentation, as shown by the foul smelling stools and tympanites and other evidences of excessive growth of the non-specific bacteria which throng the bowel during the

*Read before the New Mexico Medical Society, Roswell, N. M., September 15-16, 1909.

progress of the fever, his use of them is rational in that by this means other toxic materials are prevented from being generated in excess. Many antiseptics are in use, but as a rule I prefer the mercury as described above.

Hydrotherapy. An order is given that if the temperature rises to 102 degrees, F., the patient is to be rubbed with tepid, cool or cold water, according to the degree with which his temperature resists the bath, and according to the toxemia present. When the toxemia is great a brisk rub with cold water or a piece of ice is good to cause a reaction and arouse the patient's vitality. Ordinarily sponging with cool water, especially the spine and limbs, will keep the temperature within reasonable limits and render the patient more comfortable, if persistently carried out. When the patient is very weak and does not react to the cold sponging readily, the water should be warm or hot, as reaction must be produced or internal congestion is increased. Cold water or the ice bag should be used on the head to prevent cerebral congestion.

Some form of bath at least once a day is necessary, even if the temperature does not rise high enough to require sponging, to establish cleanliness and equalize the circulation.

He who treats typhoid fever without resort to hydrotherapy—if it can be used—is not doing all that can be done. The use of hydrotherapy greatly lowers the mortality, it is said, saving 10 in every 100 cases, but it does not diminish the frequency of perforation or hemorrhage, nor does it shorten the duration of the fever, but it often shortens the length of the illness by preventing complications.

Diet. The diet consists of milk, eggs, broths and fruit juices. Buttermilk is far preferable, as it does not coagulate in the stomach and produce tympanites, as does sweet milk, and agrees usually with the most delicate stomach. Two to three pints should be given each twenty-four hours, divided so as to be given three to four hours apart. The white of an egg given in the milk greatly adds to its nourishing properties.

The juice from three to four oranges a day is nourishing and has a beneficial effect on the alimentary canal, aiding the stomach by relieving nausea and assisting the bowels to act more freely, as fruit acids do, and at the same time assists in keeping up the alkalinity of the blood. Grape and other fruit juices have the same beneficial effect.

Large amounts of water in the form of lemonade or ice water are given to keep the tissues of the body supplied with the proper amount of fluids and flush the kidneys, thus keeping them active.

Some writers condemn the use of meat broths, on the ground that they are good culture media and tend to produce tympanites. While this is probably true as to large quantities, I have seldom met with such results when they are properly prepared and given in small amounts, as they are easily digested and are very nourishing. They are especially desirable during the stage of convalescence and given in increased amounts. If the stomach be irritable a little lime water may be given, and is usually sufficient to allay the irritation.

SPECIAL SYMPTOMS.

Constipation is relieved preferably by enemata of glycerine and water or soap and water. Olive oil or castor oil may be given once or twice a day if the injections do not relieve.

Diarrhœa, if excessive, is controlled by the use of five to ten grains of bismuth subnitrate every three to four hours. Much larger doses may be given if needed. Aromatic sulphuric acid, ten drops in simple elixir, given every three hours is a very reliable remedy. Rectal injections of normal saline solution, to which has been added a drachm of bismuth subnitrate, materially aids in controlling the irritation of the lower bowel.

For tympanites, a turpentine stupe is placed over the belly before the gas accumulates in any very great amounts. An injection of a drachm or two of the emulsion of asafœtida greatly relieves, and turpentine given in 10-drop doses in emulsion or capsule every four to six hours by the mouth is probably one of our best remedies. If the gas does not pass away it may be aided by using a long rectal tube.

Hemorrhage from the bowel does not offer much opportunity for direct treatment. In a majority of cases the best we can do is to maintain body heat by the application of external heat. If the circulation becomes feeble a hypodermoclysis of normal saline is used once, twice or thrice in the succeeding twenty-four hours, as the case may require. There are no astringents

to be given by the mouth by which we could hope to reach the affected part. A small ice bag applied to the belly, at the same time hot water bottles to the extremities, may do good by influencing the circulation in the intestine. Opium at this time may do good by diminishing peristalsis.

The treatment of *perforation* consists of giving opium to relieve pain and employing heat and stimulants, and an abdominal operation at once if circumstances admit of it at all.

During convalescence the patient should be fed with increasing amounts of nutritious, easily digested food, and iron, of which Basham's mixture is an excellent preparation, should be administered.

In the preparation of this paper the writer has confined it to the treatment employed by him in typhoid fever in the form which usually comes under observation.

In the naming of drugs I realize that there are many and very valuable ones of which mention has not been made. But as one cannot use all the drugs that are valuable in a given disease, I believe that to outline a treatment, chosen from our best authors and studiously put it into practical use is the best way to become thoroughly acquainted with its effect and the indication for its use. This is far more efficient than to use a greater number of drugs and not be able to obtain their best effects.

For this reason I submit my efforts for your consideration, with the desire that you grasp the point I had in mind while preparing these remarks—that is, the restricted and more rational use of drugs in the treatment of typhoid fever.

CASE OF VAGINAL CESAREAN SECTION FOR ECLAMPSIA.*

By JOHN F. MORAN, M. D., Washington, D. C.

I desire to report the following case of vaginal Cesarean section performed on a case of eclampsia occuring at five months' gestation. The patient was seen in consultation with Dr. Edgar Snowden, who furnished the following history:

"Mrs. M., age 32; first consulted me April 5, 1909, to engage me to attend her in her approaching confinement. She has always enjoyed good health. Was married November 7, 1908. Last menses ceased November 5th, two days before marriage. She was apparently in excellent condition and I looked forward to an easy and uneventful labor. Urinalysis April 6th, as follows: Color, amber; reaction, acid; sp. gr., 1019; albumen, negative; sugar, none; urea, gr. 17 to the ounce; few uric acid crystals, but no casts. She again consulted me on April 16th, and complained of swelling of feet and pains in both arms. A diet, excluding meats, prescribed and calomel ordered. She was requested to return the next day and bring a twenty-four hours' specimen of urine. She telephoned the next day requesting me to call as she was feeling worse; there was marked edema of the lower extremities and there was puffiness of the face. She was put to bed and given lithia, digitalis and freely purged with Epsom salts. Unable to obtain 24-hour specimen of urine on account of purgation, urinalysis showed considerable albumen; sp. gr., 1015; urea, gr., 11 to the ounce, and a few hyaline casts. April 18th, excreted 33 ounces in twenty-four hours; color, amber; sp. gr., 1014; albumen, 50 per cent. by volume; urea, gr. 10 to the ounce; many hyaline casts. When seen in the afternoon she complained of some dimness of vision in the left eye; otherwise her condition was unchanged. Strict milk diet was ordered and she was told to drink water copiously; lithia and digitalis increased. April 19th, condition about the same. Ordered acetate of potash and buchu in addition to other medicines. In the evening I was summoned again on account of severe pain in back and extreme nervousness. Examination revealed audible rales over both lungs posteriorly and she complained of shortness of breath. Vision of left eye much worse—scarcely able to see with it. Hot fomentations over lumbar region were ordered and a sedative administered.

"April 20th, there being no improvement, I requested a consultation. Dr. Moran was called at 5 P. M. The urine now contained 75 per cent. albumen by volume; urea, gr. 12 to the ounce; indican present. Patient is in semi-stupor and answers are monysyllabic. Complains of headache; general edema of face and body. It was decided to remove the patient to Columbia Hospital at once, with a view of terminating the pregnancy if the menacing signs continued."

About a half hour after we left the patient

*Read at a meeting of the Medical and Surgical Society of the District of Columbia, November 4, 1909.

she had a convulsion. Shortly after admission to the hospital she had a second convulsion, followed by profound coma and stertorous breathing. The pulse was 150, respiration 40. Examination showed the cervix intact and about two inches in length. Immediate delivery by vaginal Cesarean section was advised and accepted. Patient had the third and last convulsion in the anesthetizing room, and her condition when she was placed upon the operating table was extremely critical.

The usual anterior incision of the cervix and lower segment was made. As the fetus was not visible an incision of three and a half inches only was made. The waters were ruptured, a presenting foot grasped and secured with a loop of tape. In making traction, the foot was pulled off and in extracting the body the head was severed but was easily extracted with dressing forceps. The fetus was about four and a half months gestation. The placenta was expressed by the Crede method. The incision in the lower segment was closed with kangaroo tendon and the mucous membrane sutured with catgut. The vaginal portion was left unsutured to permit of free drainage. The patient's condition throughout the operation was desperate, and oxygen, digitalis, stimulants and 1600 cc. salt solution under breasts were administered. The pulse ranged from 132-160 and respiration from 40 to 50; half ounce of chloroform given. Patient reacted well.

After-treatment consisted of withholding all nourishment for twenty-four hours, giving calomel in quarter-grain doses every fifteen minutes for three hours, nitroglycerin gr. 1-100 every four hours and colonic irrigation with salt solution. During the first twenty-four hours pulse varied from 132-160; respiration, 32; urine, 40 ounces. Was restless and delirious and did not regain consciousness until thirty-six hours after operation, and then went on to uninterrupted recovery.

Examination of eyes by Dr. Shute showed albuminuric retinitis. May 14th, examination per vaginam shows excellent results and operation was entirely successful. Urinalysis by Dr. Snowden in July, no albumen or casts. July 26th, patient came to my office. Said her eyesight was completely restored and that she felt perfectly well. Has been unwell three times since operation, flow lasting four days and without pain.

Eclampsia, because of the insufficiency of knowledge concerning its etiology and nature, is still much involved in hypothesis and theory, its treatment is largely empirical, and its morbidity and mortality high. It is a satisfaction to know, however, that much important work has been accomplished in recent years, particularly in regard to its pathology, which in supporting the toxic theory is thus contributing to a more comprehensive knowledge of the disease. That various toxemias affect the pregnant and non-pregnant alike is obvious, but the trend of opinion favors the belief that there are one or more varieties dependent on the gravid state, which are probably the underlying cause of eclampsia, hypermesis gravidarium, acute yellow atrophy of the liver and many of the psychoses of pregnancy.

Conformably to the various views held as to the origin of eclampsia, different methods of treatment have been practiced, but the results have remained as uncertain as the theoretic foundation upon which the methods have been based.

Conceive as we may of the etiology of eclampsia, whether of fetal, placental, maternal, or combined origin, the one certain incontrovertible fact is that pregnancy is necessary, for without pregnancy there can be no eclampsia. Therefore, the therapeutic conclusion must be that in eclampsia, prompt termination of pregnancy through the quickest possible delivery of the fetus consistent with safety, is of primary importance and to be considered before all other measures.

To appreciate the sphere of each of the methods of artificial dilatation—for each has its special indication—one must have in mind the anatomical changes and the physiological actions of the uterus during pregnancy and labor. In the primipara the cervical canal is closed throughout pregnancy, while in the multipara the internal os may be closed, the external is patulous. In the later months of pregnancy of primipara, owing to the increasing intrauterine tension on account of the intermittent contractions of the uterus and resistance of the cervical barrier, the passive lower segment is formed; and at or just prior to labor the forces are exerted upon the internal os, which gradually unfolds until complete dilatation of the cervix is effected. In multipara, however, because of the relaxed condition of

the uterus, the intrauterine tension is not so great, except in hydramnion and twin pregnancy; so that there is little effacement of the internal os during labor, and in dilating, the cervical canal assumes rather a tubular form, unlike that of the primipara, which is conical.

When the first attack occurs, if the soft parts are already dilated and there is no longer any contraindication to the use of forceps or version, rapid delivery is easily accomplished. Such cases occurring late in the stage of dilatation have, as is well known, a relatively favorable prognosis. It is less promising when the convulsions appear before the cervix is sufficiently dilated. If the cervix is effaced but the external os remains undilated, manual dilatation may suffice to effect delivery in fifteen to twenty minutes. When the cervical canal is not unfolded, metal and manual dilatation are liable to cause deep rents, and the rubber bags may act too slowly.

Since vaginal Cesarean section is not subject to such restrictions, the operation according to Duhrssen, is indicated when the cervix is intact or imperfectly dilated, and not yielding to gentler measures, and the life of the mother or child is in danger, as from pathological conditions of the lower segment, stenosis, acute toxemia, eclampsia, accidental hemorrhage, heart and lung complications.

Hemorrhage, extensive lacerations, owing to incomplete dilatation, injuries to the bladder, infection, and rupture of the cicatrices in a subsequent labor, are the dangers to be apprehended in cutting operations of the cervix, but with a clean and well executed technic these complications should rarely occur. All of the methods of obstetric intervention are of value, but each must be used only after thorough examination and study of the case has determined its fitness.

In 1905 I reported to this society two other cases of vaginal Cesarean section performed for eclampsia; both patients recovered, and in 1906 I reported the safe delivery of one of them of a living child. This makes the thirteenth case of vaginal Cesarean section done in this city (Fry, 6; Sprigg, 3; Kelly, 1, and 3 by myself). There was only one death and that patient was in a moribund condition, so that the operation should not be blamed for the result. The operation is a valuable addition to the obstetric armamentarium, but it requires skill and is not to be lightly considered.

In conclusion, while the etiology of eclampsia is still unsolved, its clinical phenomena and pathology point to a probable intoxication of maternal, fetal or combined origin. Therefore, sedation, elimination and evacuation of the uterus are the chief indications in the treatment. The sedatives are valuable for their tranquilizing influence, while the delivery is being promoted or effected by other measures. Essential to success is a well-thought plan of prompt, but not over-zealous procedure based upon the various phases of the disease, combined with a knowledge of the condition of the cervix and the changes which it must undergo before pregnancy can terminate or be terminated.

2426 *Pennsylvania Avenue, N. W.*

Analyses, Selections, Etc.

Some Reflex Neuroses Arising from Ocular and Nasal Abnormalities.

In a paper on the above subject, read before the Mississippi Valley Medical Association, at St. Louis, October 14, 1909, the author, Dr. J. A. Stucky, of Lexington, Ky., says that many of these conditions are the result of too much strenuous life in the crucible of civilization, "burning of the candle at both ends," resulting in over-tension or neurasthenia. The eye is conceded by the neurologist, as well as the ophthalmologist, to be the most important etiological factor in many of the systemic reflexes, and only in the last few years have our scientific observers given attention to the nasal origin of many reflexes, which he considers of as much vital importance as those of ocular origin.

Emphasis is placed upon the "deadly parallel of reflex symptoms of nasal and ocular origin," requiring most careful examination as well as intuitive insight to properly locate, often having to eliminate the ocular element, before proceeding with the nasal treatment.

The most frequent causative agent of nasal reflexes is the middle turbinate, pressure by it in either lateral or downward direction—one or all three—causing choreaform twitching of the eye-lids, spasmodic movement of the face, frontal headache and mental depression.

The second cause mentioned is nasal hyperæsthesia of systemic origin—usually lithemic in character—resulting in irritation of the tubercle of the septum. This causes vascular dilatation and pressure contact against the middle turbinate, and touching the area with a probe precipitates supra-orbital neuralgia, pain in eye, lachrymation and other evidences of reflex irritation. Any interference with free nasal breathing through the superior portion of the nose results in interference with ventilation and drainage of the accessory sinuses, and produces sub-oxidation and negative pressure in the sinuses, increasing the sensitiveness of the whole system and rendering it more liable to reflex disturbances. Several cases of blepharospasm are cited, which were relieved by removing the middle turbinate; seven cases of habit chorea in children were relieved by correcting the refractive error and removing adenoids. Many cases of gastric neuroses and neurasthenia, the writer believes, have their exciting cause, either in ocular or nasal (often both) abnormalities. Five cases of amblyopia, three having choked disk and evidence of cerebral pressure, with great and constant pain, in which removal of the middle turbinate and draining the sphenoid sinus, and ethmoid cells of pus, relieved the pain and restored the vision.

There were two cases of ophthalmoplegia externa, one of which was relieved by the radical operation on the frontal sinus after Killian's method; the other, by cleaning out granulations and pus from the sphenoid sinus and ethmoid cells.

The author claims it is not difficult to account for the serious ocular disturbances resulting from intra-nasal and sphenoid sinus disease, after what has been proven by the exhaustive work of Onodi-Zucherhandle and Loeb, who have shown the intimate relation of the optic nerve with the upper surface of the sphenoid bone and the posterior ethmoid cells; and it is difficult to comprehend how this nerve can escape involvement in affections of the sinuses, as the separating layer of bone is often as thin as paper and full of dehiscences. He believes the nasal abnormalities described to be the most prolific causes of migraine, and the point of irritation may be so small and so obscured by the edema or adherent middle turbinate that a thorough examination cannot be made without first spraying the parts with 1 to 7000 adrenalin in normal saline solution. In many cases it takes very little to block the small openings through which the accessory sinuses are ventilated, and the oxygen of the imprisoned air is slowly absorbed by the lining mucous membrane, creating a rarefied condition and resulting in a negative pressure and consequent swelling of the lining membrane and an increasing blood supply to this region. Venous stasis and pressure of the congested tissue on the nerve endings result in the reflex vaso-motor disturbances in the circulation or the interchange of air between the nasal chambers and accessory sinuses; hence we have sub-oxidation, pain and neuroses.

The relief of the conditions referred to in this paper is amenable either to systemic or surgical treatment, often both being necessary.

SUMMARY.

1.—The eye and nose are most important factors in the etiology of reflex neuroses and should, therefore, be thoroughly examined and positively excluded before beginning to search for other causes. 2.—Ocular and nasal reflexes possess many manifestations in common, which should be carefully differentiated at the earliest possible moment. 3.—Eye strain, whether from ametropia or subnormal accommodation, should be accurately corrected in order to eliminate the eye as a causative factor. 4.—Pressure contact in the nose will always excite some reflex disturbance when any hyperesthetic area is infringed upon, and should, therefore, be eliminated. 5.—Every obstruction in the superior part of nose to free breathing should be removed. 6.—Recurrence of any reflex neurosis demands re-examination and renewed search for the original exciting cause. 7.—Lithemic conditions and faulty intestinal metabolism should be carefully considered in every case of reflex neurosis, whether arising from ocular or nasal abnormalities.

Book Notices.

Handbook of Medical Diagnosis. By J. C. WILSON, A. M., M. D., Professor of Practice of Medicine, and Clinical Medicine, Jefferson Medical College, etc., 408 text illustrations and 14 full page plates. Philadelphia and London. J. B. Lippincott Co., 1909. Large 8vo. 1,435 pages. Cloth, $6.

Notwithstanding the large size of this book, it deals almost solely with matters referring to medical diagnosis. It is divided into four

parts: 1. Medical Diagnosis in general; 2. Methods and their Immediate Results; 3. Symptoms and Signs; and 4. Clinical Applications. If the practitioner will only take the time, it will well repay him to read this book carefully from the first to the last pages; as thereby he will get many suggestions as to diagnosis with which he is not familiar, which he may apply in the diagnosis of many doubtful cases. The drawings of medical topography are good, and to them frequent reference will have to be made by the physician. About 600 pages of the book are devoted to the first three divisions or "parts" referred to above, while about 800 pages are given to diagnosis of special diseases—beginning with the specific infections, to which 240 pages are devoted. The diagnosis of diseases due to animal parasites are discussed. Diseases of chronic intoxications are next considered. In short, conditions that can be classified by causation are each fully considered from a diagnostic point of view. The section on diagnosis of diseases affecting the cranial nerves is a very important one. While we notice the omission of some points we might have wished the author to dwell upon, such as certain splenic conditions, etc., he has said so much of utility that the book as it is will remain a standard authority for years to come.

Textbook of Surgery. By GEORGE EMERSON BREWER, A. M., M. D., Professor of Clinical Surgery, College of Physicians and Surgeons, Columbia University, New York, etc. Illustrated with 415 engravings in text and 14 plates in colors and monochrome. Second Edition. Thoroughly revised and much enlarged. Lea & Febiger, New York and Philadelphia. 1909. 8vo. 915 pages. cloth, $5 net; leather $6 net.

This edition of a text book for students and practitioners is practically a new work on surgery and up to date. It covers the whole field of practical surgery in a way that gives to the book the quality of easy reading which is instructive in detail to the student and practitioner. While it has chapters on the principles of surgery, there is nothing superfluous in the language. The evident aim of the author is to be thoroughly practical, and whenever they are needed, abundant illustrations are given. The new process of color photography direct from nature has been employed in this volume for the first time in medical literature. Besides serving well the purposes of a good college text book, it likewise well serves the wishes of the practical surgeon. The Table of Contents shows the systematic arrangement of subjects, while the double column 39 pages of Index affords ready reference to a subject discussed. It is a fine, useful book.

Practical Medicine Series. Under General Editorial Charge of GUSTAVUS P. HEAD, M. D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School.

Volume IV. General Medicine. Edited by FRANK BILLINGS, M. D., Dean Rush Medical College; and J. H. SALISBURY, M. D., Professor of Medicine, Post-Graduate Medical School. Series 1909. 358 pages. Price $1.50.

Volume VIII. Pediatrics. Edited by ISAAC A. ABT, M. D., Assistant Professor of Medicine, Rush Medical College; with Collaboration of MAY MICHAEL, M. D., Orthopedic Surgery. Edited by JOHN RIDLON,, A. M., M. D., Professor of Orthopedic Surgery, Northwestern University Medical School; with Collaboration of A. STEINDLER, M. D. Series 1909. 242 pages. Price, $1.25. Chicago: Year Book Publishers. 12mo. Cloth.

As so often stated the *Practical Medicine Series* comprises ten volumes of uniform duodecimo size on the year's progress in Medicine and Surgery, at an annual subscription price of $10. Each volume, however, has its special price. Such a series as this is compelled to be popular after it has once become known to the doctor. Each volume notes the advances during the year previous to its issue in the department treated of. Thus each volume serves as a supplement to the most recent textbooks on the various subjects discussed.

Treatise on Principles and Practice of Medicine. By ARTHUR R. EDWARDS, A. M., M. D., Professor of Principles and Practice of Medicine, and of Clinical Medicine, Northwestern University Medical School, Chicago, etc. Second and thoroughly revised edition. Illustrated with 100 engravings and 21 plates. Lea & Febiger, New York. and Philadelphia, 1909. Large 8vo. 1257 pages. Cloth $5.50 net; leather $6.50.

It speaks for a book that a demand for a second edition should so soon be called for. The author has availed himself of the opportunity to very much condense the descriptive pages in the former edition and has added many new sections. He has especially given the subject of therapy a thorough revision. Yet, withal, the present edition is some 60 or 70 pages less than the former. The effort to condense has caused the author to overlook some very important matters. For instance, although Pellagra has for perhaps two years or more been

spreading in portions of this country, no mention of the fact occurs in the second edition. Notwithstanding the too close attempt at condensation, the work is more systematically arranged and covers practically the whole field of medicine. As a text book for colleges it is excellent; for the physician it is clear in description and thoroughly practical in its technic. It is a fine book.

Editorial.

Doctors of Virginia! Get Actively to Work.

The Legislative Committee of the Medical Society of Virginia recently held a conference in the office of the Secretary of the society. Drs. George A. Stover, South Boston, chairman; J. H. Ayres, Accomac, and H. S. MacLean, Richmond, were present. The other members of the committee, Drs. W. B. Payne, Covington, and J. Wilton Hope, Hampton—unavoidably detained—sent encouraging messages. Drs. Ennion G. Williams, Chief Health Officer of the State; William F. Drewry, Petersburg; H. U. Stephenson, of Toano; J. N. Upshur, representing the Richmond Academy of Medicine and Surgery, etc., were in attendance by invitation.

It seems that during the recent meeting of the Finance Committee of the Legislature, the appropriations asked for for various causes exceed the balance in the State's Treasury, and some discouragement as to the success of the repeal bill on this account had been expressed. It was pointed out, however, that requests for appropriations in excess of the amount in the Treasury are usual But it was also pointed out that the 1910 re-assessments of values of property, etc., in Virginia will probably much exceed those of former years—such has been the material growth of the State It was also pointed out that even if there were millions of dollars surplus in the State Treasury there would still be some claims for all of it.

It must not be forgotten that much of this prosperity of this Commonwealth has been due to the unobtrusive, yet constantly earnest study and hard work of the medical profession to prevent disease, to save lives, to restore laborer and merchant alike to health, etc. For years the profession has been carrying on campaigns of education in the lines of sanitation and hygiene, which has resulted in the saving of health and lives, and the consequent annual savings of thousands upon thousands of dollars to the State. This increased and increasing healthfulness of Virginia, resulting in the saving of lives from tuberculosis, diphtheria, malarial troubles, etc., is an asset of incalculable monetary value to the State—many times exceeding the total amount of State license taxes on doctors.

In view of such special work *for the good of the people*—work, which, it may be true, is self-assumed, and yet opposed to their own pocket-book interests—it does seem that the profession is asking for scarcely a pittance in petitioning that State license taxes be removed from them. It appears a reflection upon the intelligence of former legislators, and upon their proper sense of justice, that such a tax has not long since been removed—as most other States have done.

Doctors toil day and night to prevent disease and to save health and life. They are the constant helpers of conscientious, intelligent health officers—State and local. Without their prompt reports to health officials of various infectious diseases, observed in their rounds of practice, endemics or epidemics could not be prevented. They should report births, various illnesses, deaths, causes, etc., so that accurate statistics may be regularly compiled. In short, such is the nature of their studies for humanity's sake that doctors should always be willing helpers of competent health officials.

We would urge Virginia doctors at once to be aroused to activity to properly inform their legislators (to assemble in this city in a few days) as to the just merits of the claim of the profession for repeal of State license taxes on practitioners, for better vital statistics, registration laws, etc., and to help the Legislative Committee of the Medical Society of Virginia in every honorable way possible.

The Seaboard Medical Association.

This association, which now numbers more than six hundred members, and is composed for the most part of doctors residing on the seaboard of Virginia and North Carolina met in Norfolk, Va., December 7-9, 1909. Dr. Southgate Leigh, of Norfolk, presided, and the meeting was one of the largest and most inter-

esting in the history of the association. Many able papers were read, and subjects of general interest, including cancer, pellagra, hookworm, consumption, and matters of public health, were freely discussed.

The officers for the coming year are: Dr. W. T. Parrott, Kinston, N. C., President; Vice-Presidents—Drs. Joseph Grice, Portsmouth, Va.; B. H. Haley, Suffolk, Va.; H. D. Walker, Elizabeth City, N. C.; Treasurer, Dr. Israel Brown, Norfolk, Va.; Secretary, Dr. J. R. Parker, Goldsboro, N. C., and Orator, Dr. J. H. Hiden, Pungoteague, Va.

After a most pleasant social and professional session, the association adjourned to meet next year in Kinston, N. C.

U. S. Pharmacopoeial Convention.

Drs. Roshier W. Miller and Frank M. Meade, of Richmond, and John Staige Davis, of University, have been appointed delegates from the Medical Society of Virginia to this convention, which will be held at the New Willard Hotel in Washington, D. C., beginning May 10, 1910. As this is now a corporate body, no organization can be represented unless it is incorporated and has been in continuous operation in the United States for at least five years prior to time fixed for the decennial meeting of this convention.

In order that the Pharmacopoeia may be properly revised and amended, it has been suggested that the various local societies devote an evening to the discussion of this question and send recommendations to the chairman, Dr. Reid Hunt, Washington, D. C., who will transmit them to the convention so that they may receive consideration.

Examination of Candidates for Assistant Surgeon in the Public Health and Marine Hospital Service

Will be held at 3 B Street, S. E., Washingington, D. C., January 24th, at 10 A. M. Candidates must be between ages of 22 and 30, be graduates of reputable medical colleges, and furnish testimonials from responsible persons as to professional and moral character. According to their attainments, successful candidates are assigned to duty, as vacancies occur, in the large hospitals of seaport towns of the United States. After certain periods of service, officers are entitled to examination for promotion.

For information, or invitation to appear before board of examiners, address "Surgeon-General," P. H. and M. H. Service, Washington, D. C.

The Tri-State Medical Association

Will hold its twelfth annual session in the Auditorium of the Jefferson Hotel, Richmond, Va., February 15-17, 1910. The local committee is very active in its endeavor to have this the record meeting of the association. Reduced railway fares have been secured, and the many hotels will furnish ample accommodation for all who may attend. A three-days' program is being arranged, for which it is necessary that all titles of papers be promptly sent to the Secretary, Dr. J. Howell Way, Waynesville, N. C., in order that they may be properly listed.

All regular physicians in the Carolinas and Virginia, members of their State societies, are eligible for membership, and their presence and participation is cordially invited.

The Southern Surgical and Gynecological Association

Met at Hot Springs, Va., December 14-16, with an attendance of over one hundred of a membership limited to 200 surgeons, many of national reputation. The President, Dr. Stuart McGuire, of Richmond, wielded the gavel in his usual excellent style, and the meeting was a pronounced success, scientifically and socially.

Nashville, Tenn., was selected as the next place of meeting, and the following officers were elected: President, Dr. W. O. Roberts, Louisville; Vice-Presidents, Drs. Joseph C. Bloodgood, Baltimore; L. C. Morris, Birmingham; Secretary, Dr. W. D. Haggard, Nashville; Treasurer, Dr. W. S. Goldsmith, Atlanta.

A Special Conference on Medical Education and Legislation

Will be held at the Congress Hotel, Chicago, February 28-March 2, 1910. Many important topics bearing on medical education will be discussed, including the formation of a National Bureau of Health.

The Annals of Surgery,

Published in Philadelphia, in December celebrated the completion of its fiftieth volume, by issuing a Jubilee number. This issue of nearly 400 pages, profusely illustrated, contains twenty-three articles by eminent medical writers from all parts of the world, and is worthy of a prominent place in the library of any surgeon.

Schering & Glatz.

Mr. C. Gottlob Kolb, for many years actively connected with this firm, has retired. The business, however, will be continued under the same name by the remaining partner, Mr. Carl F. Stiefel.

University College of Medicine (Richmond) Destroyed by Fire.

The building of this University (corner of Clay and Twelfth streets) were destroyed by fire—presumably due to short circuiting of the electric light current—which was discovered about 4 A. M., January 6th. In spite of a sleet, which made the streets as "slick as glass," the fire department did splendid work and kept the flames from reaching the Virginia Hospital, adjoining, though some little damage was done this building by smoke and water. Much praise should be accorded the hospital internes and nurses for the manner in which they cared for the patients.

A committee of the faculty is considering plans for continuance of the curriculum. The faculty of the Medical College of Virginia, as also the authorities of Richmond College, and other institutions in this city have tendered the use of their buildings until the faculty of the University College can determine on plans for the future, which we hope to announce in our next issue. Our sincere sympathy is with the student body and others affected by this fire. It is believed that the records of the institution and other valuables in the fireproof vaults are uninjured.

This University, originally known as the College of Physicians and Surgeons, Richmond, Va., was established in 1893, under the presidency of Dr. Hunter McGuire, and has met with remarkable success throughout its career.

For Sale.—Attractive proposition to early buyer. Will give introduction to practice paying $2,500 yearly to purchaser of my modern office equipment at invoice price (about $800). All conveniences in suburbs of large city in Virginia. Address "Suburbs," care Virginia Medical Semi-Monthly.

Obituary Record.

Dr. Edmund S. Pendleton

Died at his home at Iron Gate, Va., on the evening of December 27, 1909, after a long and painful illness. Dr. Pendleton graduated from Jefferson Medical College, of Philadelphia, in 1854, and took an active part with the Fourth Virginia Cavalry throughout the Civil War. Upon returning from this service, he settled in Richmond for several years, later locating in Louisa, his native county, where he made his home until about fifteen years ago, when he moved to Iron Gate. Here, as elsewhere, by his genial, hospitable disposition, he became an universal favorite among a large circle of friends. His body was carried to his old home in Louisa for interment. Dr. Pendleton is survived by a widow and several sons and daughters.

Dr. James A. Burroughs,

President of the North Carolina State Medical Society, died at his home in Asheville, N. C., December 29th, after an illness of ten days from Bright's disease.

Dr. Burroughs was born in Campbell county, Virginia, fifty-three years ago, and received his medical education at the Louisville Medical College (now known as the Louisville and Hospital Medical College), from which he graduated in 1882. Dr. Burroughs was prominently identified with many of the leading medical associations throughout the country, and had attained great prominence as a leading specialist on tuberculosis, having written several books on this subject. His widow survives him.

Battle & Co., of St. Louis, Mo., have just issued No. 11 of their series of *Charts on Dislocations,* a copy of which they will send free to any physician on application. Back numbers can also be supplied.

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Original Communications.

NOTES ON THE HEMATOLOGY OF PELLAGRA.*

By C. H. LAVINDER, M. D., Washington, D. C.
Passed Assistant Surgeon, U. S. Public Health and Marine Hospital Service.

A rather cursory review of the literature of a subject so well worked as pellagra impresses one with the idea that the study of the blood in this disease has been somewhat neglected. Carletti,[1] in a contribution on the hematology of pellagra in 1903, said that up to that time hematological researches had all been of a particular phase of the question; and that there did not exist in all literature a complete study of the subject. So far as I can learn from a somewhat hurried review of the literature since then this statement is practically true to-day. Contributions are constantly being made on various points of the subject, but complete studies appear to be wanting.

This seems to me an interesting and not unprofitable field for American investiagtors. My work on this subject has been limited, and the results as yet have not been satisfactorily collated, but a brief review of some points may prove interesting, if not stimulating, to those interested in pellagra.

Blood Counts, Hemaglobin Estimation and Differential Leucocyte Counts.—Carletti,[1] summing up the literature of cell counts and hemaglobin estimations, reviews briefly the work of Lombroso, Capezzuoli, Sepilli, Agostini, and D'Ancona and Randi, all of whom obtained somewhat similar results—*i. e.*, a fairly constant, though not excessive, reduction both in the number of red cells and in the hemaglobin. Only one of these workers reported on white cell counts (Sepilli), and he found the number of leucocytes normal.

With regard to qualitative changes in the cells, Carletti states that many observers have made studies on this point but did not seem to find sufficient changes to interest them. He quotes, however, Agostini's results which were pallor of red cells, slight tendency to rouleaux formation, abundant small cells (microcytes?), poikilocytosis, large leucocytes with large granules (?) and abundant pigment (?).

Carletti, in summing up his own work, states that he found a constant mild reduction in the number of red cells, much variability in the number of white cells, but never a leucocytosis; constant reduction in homaglobin (65 to 75 per cent.) with a low color index (0.75 to 0.80). As for qualitative changes in the cells he found constant but not grave modifications with a rather large number of small red cells (microcytes?); the varieties of leucocytes he found retained their normal proportions, with a possible increase in the large mononuclears; eosinophiles he saw very rarely.

Fiorini and Gavin,[5] in a study of non-alienated pellagrins, report an absence of leucocytosis, but a typical mononuclear increase and a decided eosinophilia.

Among more recent workers, Galesesco and Slatinéano,[2] from an examination of thirty-one cases, report a constant diminution in the number of red cells (three to four millions) without qualitative changes; hemaglobin (Von Fleisch) from 70 to 90 per cent.; slight increase in the number of leucocytes (9,000 to 10,000), differential counts, polynuclears from 55 to 78 per cent., lymphocytes 17 to 35 per cent., large mononuclears 10 to 22 per cent., eosinophiles 2 to 4 per cent. They conclude that there is a constant large mononuclear increase from which no deduction can be drawn as to etiology.

*Read before the Conference on Pellagra, held at Columbia, S. C., November, 1909.

Fratini[3] made a study of thirty-four cases, both acute and chronic forms. He used the Thoma-Zeiss counting apparatus and the Von Fleisch hemoglobinometer, studied fresh specimens and specimens stained with Ehrlich's triacid stain after fixation in bichloride of mercury; and made differentiaal counts. His results were: A rather constant reduction in the number of red cells (3,000,000 to 4,500,000) and in the hemoglobin (55 to 92 per cent.); white cell counts ranging from 7,412 to 11,418; differential leucocyte counts somewhat variable, but a rather constant slight increase in eosinophiles (presumably, of course, eosinophilic leucocytes), which he attempts to explain as due to the alterations of the intestinal epithelium so common in pellagra. His figures show polynuclears 55 to 76 per cent., large lymphocytes 2 to 5 per cent., small lymphocytes 18 to 39 per cent., eosinophiles 2 to 9 per cent. As for qualitative changes in red cells he reports rather constantly macrocytes, microcytes, and poikilocytes. He also states that he found nothing resembling a protozoal parasite.

Manson[4] states that Sambon and Terni, in Italy, and Grigorescu and Galasecu, in Roumania, have noticed a relative increase of the large mononuclear leucocytes.

Masini,[6] in a study of the eosinophile cell in the blood of pellagrins, concludes that, contrary to what is found in many acute infectious diseases, there is produced in the pellagrous intoxication a conspicuous and decided eosinophilia, which occurs in cycles corresponding with the increase or diminution of the pellagrogenous toxines—that is, the more toxemia the greater the eosinophilia. He suggests that this constant eosinophilia may prove at times a valuable aid in early or differential diagnosis.

Peserico,[7] making differential counts in several cases, obtained the following results: Polynuclears, 53.7 to 67.4 per cent.; lymphocytes, 26.1 to 37.4 per cent.; large mononuclears and transitionals, 1.2 to 7.7 per cent. He speaks of the nongranular, large mononuclear, as the *bête noir* of hematology, and expresses much doubt regarding this cell.

These results, in many ways, seem decidedly discordant, but one may at least conclude that there is a very frequent, usually mild anemia of the secondary type, and that if there are qualitative changes in the red cells they are only such as one would expect. The differential leucocyte counts seem almost too discordant to reconcile in any way, but there would seem a majority opinion of a definite, relative, large mononuclear increase.

While working on pellagra at the State Hospital for the Insane in Columbia, S. C., during the past summer, I made blood counts on twenty-four cases. The results are given in the table below:

No.	Male or female.	White or negro.	Age	% hemoglobin (Dare)	No. white cells	No. red cells.	Mental involvment.	Arsenic.	REMARKS
1	M.	W.	60	75	4,000	3,424,000	No	No	Chronic, mild, neurasthenic.
2	M.	W.	60	75	8,600	4,684,000	No	Yes	Chronic, mild, neurasthenic.
3	M.	W.	60	64	6 222	4,272,000	No	yes	Chronic, mild, neurasthenic.
4	F.	C.	52	65	4,508	4,842,000	Yes	No	Chronic, mild.
5	F.	C.	52	83	10,115	4,824,000	Yes	Yes	Chronic, mild.
6	F.	C.	25	45	6,755	4,368.000	Yes	Yes	Emaciated moist erythema, spasticity.
7	F.	C.	30	45	4,800	4,888,000	Yes	Yes	Emaciating, dry erythema; paralytic.
8	F.	C.	25	45	8,266	2,826,640	Yes	Yes	Emaciating, moist erythema; improved.
9	F.	C.	35	38	9,633	2,920,000	Yes	Yes	Fairly well nourished, dry erythema
10	F.	C.	25	64	13,000	4,148,800	Yes	Yes	Emaciating; moist erythema; increased reflexes.
11	M.	W.	39	88	7,066	5,520.000	No	No	Dry erythema; neurasthenic; alcoeolic.
12	F.	C.	25	38	6,044	3,400,000	Yes	Yes	Slight emaciation; dry etythema; syphilis; round worms.
13	M.	C.	33	95	8,200	5,500,000	Yes	Yes	Well nourished; much excited; dry erythema.
14	M.	W.	55	57	11,980	3,800,000	Yes	Yes	Arterio-sclerosis, dry erythema.
15	F.	C.	16	88	13.066	4,636,000	Yes	No	Generalized, moist erythema; emaciating; paralytic.
16	F.	W.	31	59	10,844	5,604,800	Yes	No	Well nourished; dry erythema; paralytic.
17	F.	C.	22	74	9,754	3,864 000	Yes	No	Well nourished; dry erythema; hookworms.
18	F.	C.	44	70	17 310	4,708,000	Yes	No	Dry erythema; arterio-sclerosis; much excited.
19	F.	C.	37	76	5,544	5,008,000	Yes	No	Pellagroid; diagnosis doubtful.
20	F.	C.	33	96	8,880	4,620,000	Yes	No	Cured case; no symptoms for over a year.
21	F.	C.	50	93	7,344	4,440,000	Yes	No	Cured case; no symptoms for over a year.
22	F.	W.	25	80	17,400	4,976,000	Yes	No	Suicidal and excited; dry erythema; losing weight
23	F.	C.	38	86	12,010	5,504,000	Yes	No	Dry erythema; slight loss of weight; mildly excited.
24	F.	W.	22	60	5,800	4,580,000	No	No	Chronic; mild.

The technique of making these counts was as follows: The Thoma-Zeiss counting chamber, with Turck's ruling, was used; in counting red cells the four corner unit squares (25 small squares each) were counted in two preparations, and if the results were discordant a third was counted; in counting white cells the whole ruled space was counted in two preparations; and again, if results were discordant, a third preparation was counted. The hemaglobin estimation was made with a Dare instrument, which gave very uniform readings in normal individuals.

The cases were mostly of an advanced type with many secondary nervous changes, and nearly all alienated. Most of them were negro women. The greatest number of the counts were made at the same time of day (morning) and under the same circumstances as far as possible. Many of the patients had been taking arsenic in some form with full dosage, either at the time of the examination or not a very long while previously.

A brief analysis of this table shows a frequent reduction in red cells and in hemoglobin, and the color loss would seem proportionately greater than the cell loss (chlorotic type of anemia). There is a great variation in the number of leucocytes, with an occasional decided leucocytosis not clinically explicable by complications or otherwise. It is interesting to note that numbers 1, 2 and 3 in the table are the same individual, before and after arsenical treatment; and likewise 4 and 5 are made in the same individual; 19, 20 and 21 are also of interest as doubtful or cured cases.

Differential leucocyte counts were made in several of these cases. The results generally showed a relative, large mononuclear increase with an absence of eosinophilia, except in cases with such complications as round worms or hookworms. I do not tabulate these counts, as I do not find the work satisfactory and distrust the results. As will be seen from the literature reviewed above, discordant results have been obtained by other workers in making differential leucocyte counts.

The technique adopted by me was, briefly: Smears made on slides by using the edge of another slide, stained by one of the numerous modifications of the Romanowsny stain, usually Wright's; and in making the counts the fringes of the smear were avoided as far as possible. The total number of cells counted was usually 500 or more. A mechanical stage was used.

The classification used was the usual one of Ehrlich: (1) Polymorphonuclear neutrophiles; (2) small mononuclears or any nongranular cells smaller than a polynuclear; (3) large mononuclears or any nongranular cells larger than a polynuclear with a round or oval nucleus; (4) transitionals, any cell within the same limits as a large mononuclear but with an indented nucleus; (5) eosinophiles; (6) mast cells (Emerson[8]).

A brief review of the literature on this point and my own experience leads me to question the results achieved, and I gravely doubt whether, from the work done, we can make any definite statements as to just what proportions the various forms of leucocytes in pellagra may bear to each other. The only one general conclusion which occurs in the work of several is a relative large mononuclear increase. This I found with my technique above described. It seems to me that unless each worker states in full the details of the technique employed the interpretation and correlation of results will give rise to much confusion. The especial points I would emphasize in the technique are the manner of making smears, the question of counting fringes, and the classification of the various cells. If smears are made on slides in the manner done by me and fringes are counted, the results will be very different from counts made from the centers of smears. Perhaps cover glass smears, made in the usual way, might avoid this difficulty. No matter what classification of cells is used the personal equation of the counter must also have its effect, for there are many doubtful cells.

With reagrd to qualitative changes in the red cells there are undoubtedly, as one would naturally expect, such changes as are found in any secondary anemia, these changes being in great respect, of course, dependent upon the grade of the anemia. In a study of fresh smears, stained smears and smears made by "vital staining," I found only such changes as these in my work.

I made no accurate observations on coagulation time, but in drawing blood for various purposes from a number of pellagrins I have never observed any failure of fairly prompt and thorough clotting.

Bacteriology of the Blood.—The bacteriology

of the blood in pellagra forms a rather interesting chapter in the history of this disease. Bacteria, thought to be specific in their nature, have several times been described in the blood of pellagrins. Majocchi, Cuboni, Paltauf, Heider[9] and others did much work on the so-called *bacterium maydis;* Carrarioli reported the *bacillus pellagrae.* P. Marie[10] states that he observed in two cases rather constantly a micrococcus which, however, he could not grow.

Quite recently Tizzoni[11] has reported a specific bacterium which he calls *streptobacillus pellagrae,* and which he finds constantly in the blood of pellagrins, as well as in the stools, the organs after death, and in spoiled corn.

Tizzoni[11 and 12] first obtained this organism by simply incubating at 37 degrees C. blood and spinal fluid drawn from a recent cadaver, dead of acute pellagra. In his later work on the blood of chronic pellagrins his technique, with the blood, was to draw 5 to 10 cc., allow serum to separate for twenty-four hours at 37 degrees and then add the serum to an equal quantity of ordinary bouillon, incubate this mixture at 37 degrees for three or four days, and finally make transplants on defibrinated rabbit's blood agar, as well as inject into guinea pigs. He has also observed this microörganism in many cases by making simply stained smears.

Wood, of Wilmington, N. C., reports that he has several times isolated this microörganism, and in my work I have tried a number of times to isolate it, but have been invariably unsuccessful. In fact, my experience in bacteriological research on the blood of pellagrins has been uniformly negative.

Briefly to sum up the work, I have studied stained liver and spleen smears made at autopsy, have made thick blood smears, laked the hemoglobin and stained the slide, have stained fresh and dried smears in various ways, have incubated blood and citrated blood (citrate of soda, 1 per cent.), and studied smears therefrom, and have put the sediment of citrated blood which had stood for some time into the peritoneum of rats; I have followed Tizzoni's technique of adding bouillon to serum, planted blood and citrated blood on various culture media; I have injected blood into chickens, rabbits, guinea pigs and rats—all with constantly negative results.

One fact I think worthy of note, and that is that one must exercise great care in fresh smears of blood or citrated blood which has stood for a time. I have repeatedly been deceived by numerous small particles of protoplasm, like Müller's blood dust, which have a very active Brownian motion and much resemble motile bacteria or living parasites.

In conclusion, I would say:

1. That there seems to be present in pellagrins a fairly constant secondary anemia, usually not of a severe type, with corresponding qualitative changes in the red blood cells.

2. That leucocytosis is rarely seen in pellagra, and that this is probably not a phenomenon of uncomplicated pellagra.

3. That the results obtained by various workers on differential leucocyte counts are very discordant, and that conclusions should be drawn therefrom with much hesitation.

4. That nothing resembling a protozoal parasite has been reported as observed in the blood of pellagrins.

5. That I have found, in a limited experience, the blood of pellagrins in South Carolina uniformly sterile in cultural work and not infective for ordinary laboratory animals; and that I have not been able to isolate Tizzoni's microörganism.

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Adrenalin Ampoule may be used hypermatically in shock, collapse, hemorrhage, asthma, etc., or where prompt heart-stimulation is desired.

EDUCATION OF THE PUBLIC ON THE CANCER PROBLEM.*

By SOUTHGATE LEIGH, M. D., Norfolk, Va.

Over a year ago, at a meeting of the Medical Society of Virginia I had the pleasure of listening to a brief paper by that gifted Southern surgeon, Dr. Hugh M. Taylor, of Richmond, on the duty of our profession in educating the public in regard to that dread disease, cancer, and I then decided that if ever a convenient occasion presented itself I would do what little I could along the same lines.

Statistics have shown us that in recent years there has been an alarming increase in the number of deaths from cancer, both in our own country and abroad.

It will astound many of you, no doubt, to be told that in Vienna, Austria, it is claimed that the disease kills one woman in every eight and one man in every twelve who reach the age of thirty-five! And, as Dr. Taylor remarks, what is true of Vienna is true also of our own section.

Cancer claims half as many lives as tuberculosis, but is more menacing, because while tuberculosis is decreasing throughout the whole country, cancer is steadily increasing. An alarming fact also about cancer is that it is more prevalent among the highly civilized races, and is more prevalent in the higher than in the lower classes of our own people.

The United States census for 1890 reports 185,000 deaths from cancer. In 1900 the rate had increased to 295,000; and we medical men fear greatly that the census which is soon to be taken will show a still further augmentation.

It seems to me that this state of affairs is enough to so alarm our people that they would be ready and willing to take all possible steps to bring about a radical change. Especially should this be so when we inform them that cancer can be cured, and is being cured, in practically every case, if taken in time.

I appreciate fully the fact that this is a delicate matter to present to the public in a public way, and that we doctors are apt to be misunderstood and our motives misconstrued; but I contend that such false notions should not deter us from doing our plain duty to the public. And it is just as clearly our duty to educate the public on cancer as on tuberculosis. See what wonderful revolutionizing work has been done with the great white plague. It has not been many years since consumption was considered practically an incurable disease. Now, as the result of the campaign of education started by the medical profession and taken up by the all powerful press, the people have not only been shown that consumption is preventable and curable, but have to a great extent been trained in the ways of looking after this dreadful disease, until even now in the early stages of the good work the death rate has been greatly lessened and the number of cures largely increased.

While, essentially, cancer is of a different nature from tuberculosis, yet we can claim for it that to a large extent it also is a preventable and curable disease.

In disseminating among the public knowledge of the essential facts concerning cancer, upon which the public seems to be in entire and alarming ignorance, we are confronted with difficulties much grater than in the case of tuberculosis. These obstacles have evidently so deterred the profession that but little has so far been attempted.

In Germany some concerted action has been taken by the profession, due to the alarming increase in the disease in recent years. The results already are gratifying.

In this country, so far, but little has been done along the lines of enlightening the public. In addition to Dr. Taylor, of Richmond, Dr. Echols, of Milwaukee, and Dr. Crile, of Cleveland, have urged the necessity of a public campaign of cancer education.

After reviewing the available medical statistics, I believe I am safe in asserting that if taken in time *cancer is either preventable or* curable *in at least* 95 *per cent. of the cases.*

This statement to the public mind will no doubt seem incredulous. It is nevertheless true, and is based on the highest authority.

In the ordinary acceptation of the term, cancer is looked upon as a horrible, destructive disease, entirely incurable and producing the most intense and lingering suffering.

The public, and even the profession, some years ago, had practically the same opinion of

*President's Address to the Public and Profession delivered uring the session of the Seaboard Medical Association of Virginia and North Carolina, during its session at Norfolk, Va., December 7-9, 1909.

consumption. A patient with the latter disease was usually given up as incurable, and the question was as to how short or how long a time he would last. Outside of the good work which has been accomplished in tubreculosis in preventing its being communicated from patient to patient, the chief curative work has been in preventing its development and in treating it in its very early stages.

In a similar manner cancer may be prevented or cured in the pre-cancerous or early cancerous stages. And the public ought to know that the regular medical profession *is today doing precisely this thing, and doing it effectively.*

In order to teach our people how to save themselves from this dread destroyer, what steps ought to be taken? On an occasion such as this, while it is well to take advantage of the opportunity to sound a note of warning, it is, of course, not proper for me to go into details of the preventive and curative treatment of cancer. There are, however, some points that can, with propriety, be touched upon.

Why is it that the public so often refrains from promptly consulting and obtaining treatment from their regular medical advisors in cases where they have suspicion of cancer? Two reasons may be mentioned:

First, there is often the "dread of the knife." And in these advanced times, when surgery has been so simplified and rendered so devoid of pain and suffering, how could such a reason be in the least considered, when without the early use of the knife, in many instances, the patient is condemned to the ravages of a horrible, destructive disease?

Second, many people have the idea that to do anything surgical to a small growth will change it to a cancerous nature. This is entirely incorrect. In nearly every case cancer in its early stage is a local condition which does not affect the general system or the surrounding parts. To cure it, it is only necessary to completely remove the affected spot. This is also true of many small growths or sores which are not cancerous, but may, from certain irritating causes, change into cancer tissue. If removed by appropriate means there will be no danger of any after disease.

Another great trouble with the people is that they do not seek advice from their regular medical attendants about suspicious abnormal conditions. In many instances, they use patent medicines or confer with people who advertise in the papers. This is most unwise and the delay is dangerous. They ought to know that the regular profession is versed in all safe remedies and methods.

Procrastination is the cause of many a valuable life being sacrificed to the dread disease. A patient has a condition which is suspicious, but "hopes" that it will not amount to anything, and "puts off" seeing the doctor until the disease has changed from a local, curable affection to a cancer which has spread to such an extent that it cannot be eradicated.

A campaign of education for the public will have to be conducted cautiously and tactfully. In many of our communities the Boards of Health are now doing splendid work in educating the public in various matters concerning their welfare. They could well turn their attention to cancer. The time is now ripe for the dissemination of the proper literature on this subject. The "Ladies' Home Journal," which has done so much good in denouncing fraudulent remedies and treatments, would have here a splendid field of operation.

Both in tuberculosis and in cancer, some of the greatest minds of the scientific world are experimenting to find specific cures for these dread diseases at all stages. The most advanced scientists, aided by every possible laboratory facility and equipment, have for years been laboring unceasingly to effect a cure for cancer. While the cause of the disease has not as yet been fully demonstrated, still there is little doubt but that it is due to a parasite.

Experiments of this kind are carried on chiefly with the lower animals, and one of the greatest obstacles in the way of the researches has been the fact that it has been found most difficult to obtain animals that will develop the disease after inoculation. Certain species of mice and rats have been chiefly employed.

Cancer tissue is of a peculiar nature. In itself, it has no death dealing properties. It is a menace because it "has the power of persistent and unlimited growth. It is normal tissue gone wild, running amuck," so to speak. It grows into surrounding tissues and organs.

Scientists tell us that they feel sure of developing after awhile a cure for advanced cancer,

possibly a serum similar to the antitoxin of diphtheria. I doubt not but in time such a cure will be in the reach of all.

In the meanwhile, however, we must not, on account of false modesty, or professional ethics, allow our people to sicken and die of cancreous diseases when we already know that such a large proportion of them can be cured. Those of us who are aware of these things must in every way possible disseminate that knowledge gradually, but effectively, so that our people may be saved from unnecessary torture and premature death.

There is no class of cases with which our profession has to deal that causes us more distress than cases of advanced cancer. We see so many patients who have not sought medical advice until the disease has progressed too far to be eradicated. In many of these the profession is able to prolong life and render the patients more comfortable, but a cure is impossible. And yet, nearly all of these cases, if seen early enough, are curable.

The educating of the public on the cancer problem must come primarily from the medical profession, a profession which has especially during the last few years done so much towards the prevention and spread of disease.

Much has been accomplished already through the individual examining and instructing of patients, but much more remains yet to be done in that and other ways. The matter could well be taken up judiciously by the press, and probably the most good to the public would come through the various boards of health. These last could distribute appropriate literature, as has been done in the old country, calling attention of the people to the dangers of cancer, its curability, and telling them in plain words the various signs and symptoms pointing to that dread disease, and finally urging them to apply promptly to the regular medical profession in the event that any of these "danger signals" are observed.

Either in individual instruction or in public talks, stress should be laid on the "fact that in nearly all cases the disease is strictly a local, curable affection, and, further, that in many cases there is a pre-cancerous stage in which the trouble is not cancerous, but later develops into that disease."

Fortunately, this is an age of progressive thought and action. The substantial people of this country are turning their attention more and more to matters concerning public health and safety. They are using more good sense and reason in dealing with those affairs which vitally concern their comfort, health and longevity. They enjoy life and want to live as long as they can in comfort and good health. They also are anxious to improve the general health of their communities.

I believe that the time is full ripe for a general movement towards educating the people high as well as low on this most important and vital matter.

CONGENITAL WORD-BLINDNESS AS A CAUSE OF BACKWARDNESS IN SCHOOL CHILDREN. REPORT OF A CASE ASSOCIATED WITH STUTTERING.*

By E. BOSWORTH McCREADY, M. D., Pittsburg, Pa.

Word-blindness occurring in adults as the result of cerebral disease or injury hase been a well recognized condition for many years. To W. Pringle Morgan,[1] of England, the credit of first describing an analogous condition of congenital origin has usually been given. It would seem, however, that Dr. James Kerr[2] had alluded to this condition some six months earlier than the appearance (November 7, 1896) of Morgan's communication. A number of writers have since taken up the subject under the various titles of congenital word-blindness," "developmental alexia,"[3] "congenital typhlo-lexia,"[5] and "amnesia visualis verbalis."[6]

Incidence.—of the forty-one cases of which I have been able to find more or less detailed reports, all but five have been observed either in Great Britain or in this country. Of these five cases, two come from Buenos Aires, one from Holland, one from Bavaria, and one from France. This preponderance of cases among English-speaking peoples seems to me to be more a question of diagnosis than of incidence, though Claiborne[4] attributes it to the more arbitrary pronunciation of the English language. The first reports of this condition having been circulated through English mediums, it would seem but natural that it should be more carefully sought for by English readers.

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Although but some forty-one cases have been closely observed, it would appear that this number represents but a small proportion of those affected, and that systematic school inspection and closer study of backward children in consulting room and clinic will show that this is not at all a rare condition. Thomas[7] calculates that one in two thousand of all London elementary school children may be expected to show word-blindness to a considerable extent. At the time of writing his articles there were nearly one hundred cases of this condition noted on the case books at the special schools for mental defectives. Boys seem to be more frequently affected, as in the reported cases but seventeen per cent. were in girls. This might possibly be due to the relatively larger size of the head of the male child at birth, thus making it more liable to injury during labor. But it is more probable that the education of the boy being considered of more importance than that of the girl, more attention was paid to anything which might interfere with its acquisition. The greater application of the girl to her studies during early school life might have led to the concealment of her deficiency in the milder cases. The age at which the condition was first noticed varies from six years to twenty-three, the average being twelve and one-fourth.

Etiology.—That there is a distinct hereditary influence there can be little doubt. The mother of one of the patients in the cases reported by Thomas[7] stated that in spite of every advantage she herself had never been able to learn to read. Five other children in the same family had the same difficulty. The final note of a sister of the patient who had passed through the special school stated that she could do everything but read. He also notes two cases occurring in brothers. A maternal uncle of Fisher's[8] patient did not learn to read until he was ten years of age and even in adult life was a very poor speller. Stephenson[9] notes a case in which the condition "affected three generations of a family, passing from the first to the second generation by an affected female, and from the second to the third generation by a female, herself unaffected." Hinshelwood[10] reports cases in four brothers.

In other cases a neuropathic family history is not wanting. The father of Wernicke's[11] patient was a hard drinker and died insane, and a brother was feeble-minded. The mother of Lechner's[12] patient had hysteria. Two brothers of one of Nettleship's [13] patients were stammerers. I have purposely included in my list two cases which were not reported as cases of congenital word-blindness. Makuen's[14] patient had convulsions at the age of fourteen months, followed by a severe[1] and prolonged attack of meningitis. His speech was defective on account of imperfect control of tongue and lips. Quoting from Dr. Makuen: "In my case we have a definite though unsatisfactory history of an acute brain infection in infancy, and it is quite possible that the disturbance in the visual word-center may be due to a direct damage to that portion of the brain, resulting from this illness, but it is more probable that it was secondary to some disturbances in the motor tracts, rendering among other things the development of normal speech impossible. This view is strengthened by the fact that a little special training of the motor centers has not only greatly improved his speech, but has increased his capacity for recognizing and retaining the visual impression of words." Witmer's[6] case had an ocular defect due to insufficiency of the extrinsic muscles of the eye. Witmer believes the faulty word-memory in his case to have been caused by an arrest of postnatal development, due to the ocular defect. He says, however, that it is possible that the condition may have been congenital.

While I may have laid myself open to criticism for including these cases among those of congenital origin, still I believe that the element of doubt as to their being entirely due to postnatal influences is great enough to warrant my doing so. In Makuen's case there had, of course, been no attempt to read before the attack of meningitis, and very likely nothing but an attempt to speak; so that it would be difficult to positively assert that either the memory or speech defect was due directly to illness. In my own patient, who was word-blind before his speech became defective, I also noticed this improvement in the visual memory of words, after treatment directed toward the correction of his speech defect had been begun. Witmer does not state whether the amnesia in his case held good for figures or not, though he says that excepting his difficulty in reading,

writing, and spelling, geography was the only school subject that gave him trouble, implying that his recognition of numerals was good. This, together with the fact that he was good at drawing would seem to argue against the ocular defect being entirely responsible.

I believe that the speech and ocular defects in these cases are but accidental stigmata of degeneration such as may be found in any case of slight mental deficiency. In two cases reported, development in other directions was slow. Variot and Lecompte's[5] patient was late in learning to speak, and even at five or six was by no means easy to understand; Bruner's[15] patient was slow in beginning to walk and talk, and was delicate until four years of age. One of Wernicke's[11] patients (a young lady) was hysterical. Stephenson[16] reports one with tics of the muscles of eyelids, mouth and neck, and another who was of nervous temperament. Lechner's[12] patient was nervous, Ball's[17] had eight epileptiform convulsions, without complete unconsciousness, at the age of six, and one of Thomas'[7] patients was slightly deaf. Especial stress is laid upon the fact, in nearly every case, that the patient with the exception of his visual defect was of average or above average general intelligence.

Children with congenital word-blindness would seem to come under the heading of atypical children of pathologically retarded development in the classification of exceptional children recently suggested by Groszmann,[18] their normal mentality in other directions not incompatible with retardation in one particular line.

Pathology.—In congenital word-blindness we have a condition which interferes with the stamping of word images upon that particular portion of the brain which, through inheritance from generations of reading and writing ancestors, has become specifically developed for their reception. Hinshelwood [19] states in his book that "all the varieties of word-blindness met with in clinical experience can be intelligently explained by regarding them as disorders of the visual memory produced by lesions affecting more or less completely a definite area of the cerebral cortex in which are preserved the past impressions arranged in definite and ordered groups." Quoting from Bastian,[20] "The particular part of the visual center that is most concerned with the appreciation and memorial recall of words, or, in other words, the destruction of which most certainly gives rise to word-blindness, is now fairly well settled. There is much evidence to show that this region corresponds with the angular gyrus either alone or in association with part of the supramarginal lobule, and therefore that it is situated just beyond the confines of the occipital lobe, and in the region originally assigned by Ferrier, upon the basis of experiments with monkeys, as the center for vision as a whole."

The word-blindness occurs as a result of defective development, either intrauterine or as the result of injuries received during labor, there can be no doubt. That it may occur in early childhood either as the result of acute infectious disease or defective postnatal development, due to some defect of special faculties, as sight, speech, etc., is possible.

In the greater number of cases the lesion is limited to the visual word-center alone. In one of Kerr's [21] cases, however, the cheirokinesthetic and glossokinesthetic centers also would seem to be involved. This patient was "a boy, aged eleven years, who had been word-blind and agraphic all his life. He could copy literally, but mistook letters and could not do arithmetic. He had speech difficulties (dysarthria), attempting words but rendering them so badly that he hardly used speech. Birth and infancy absolutely normal." One of Claiborne's patients "could write correctly from copy and from dictation, but his spontaneous writing exhibited earmarks of motor aphasia."

While the majority of the cases observed have been reported by opthalmologists they have not in a single instance held the ocular conditions responsible for the word-blindness.

Symptoms.—About half of the word-blind children are also letter-blind, while but a small proportion are unable to recognize figures. In fact, some of them are unusually good at arithmetic, and the facility with which some recognize musical notes has been noted. That all word-blind children are not letter-blind, Claiborne believes to be due to the comparatively small number of symbols, fifty-two counting small letters and capitals, while these same letters form an infinite number of symbols when in combination. The same explanation would hold good for figures also as to the small number to be committed to memory. Figures, however, differ from letters in that when in com-

bination they are still read as figures not losing their individual value as do letters when joined to form words.

In the milder cases of congenital word-blindness words of two or more syllables are the only ones with which there is difficulty, although letters may be added or dropped even in the monosyllables. In these cases and in those slightly more marked the longer words may be recognized by forming the sounds of the letters with the lips, thus appealing to the glossokinesthetic center. In the more severe cases, and especially in those in which there is more or less letter-blindness there may be total inability to read words, or only the most used ones as, "an," "no," "on," etc. In these cases the words are so mutilated that it is only by being familiar with the text that one can tell what is being read.

Diagnosis.—Given a child of school age, intelligent in other respects and not backward in other studies, who has difficulty in learning to read, and who constantly mistakes words, who has normal vision, or whose errors of refraction have been corrected by suitable glasses, there should be no hesitancy in attributing the trouble to congenital word-blindness.

Author's case: R. E. W., aged twenty, with negative family history, is the youngest of four children. He had enteritis when an infant. At the age of four years he had an attack of pneumonia with cerebral symptoms, from which he made a good recovery except that he was rather delicate for some years. He tells me that he had great difficulty in reading from the time he first began to attend school at the age of six years. At the age of ten he was subjected to a severe fright which was the beginning of his stuttering. He has always been very backward in school, and had drifted from public to private schools, to private tutors until at last his parents, despairing of his ever gaining an education, had placed him in a business school, hoping that he might at least acquire sufficient practical knowledge to take care of himself. Considering him somewhat below par, mentally, his parents have always tried, as much as possible, to protect him from ridicule. The patient first applied to me for treatment for stuttering on March 22, 1909. Examination showed a well-developed boy in good physical condition. Dr. E. W. Day, to whom he was referred, reported nose and throat normal. The patient was wearing glasses for which he was refracted eleven years before. I referred him to Dr. Edward Stieren who reports that examination showed a high degree of hypermetropia with a moderate amount of primary atrophy of both disks; color, form sense and muscular balance were normal. R. V. 6|50 with +6-50 |D. S.=V6|12; L.V.6|50 with + 6|50|D.S.= V 6|25.

The patient was very shy and self-conscious. His expression was dull and stupid and his movements awkward. His stuttering was so bad that the least attempt to speak seemed to throw him into a state of panic. He, however, entered into the exercises directed toward the correction of his speech defect with a great deal of interest and made rapid progress. I found, however, that when asked to read simple verses and bits of prose, he stuttered as badly as ever, although he could repeat them after me or from memory very fluently. When he was able to enunciate the word he would likely call it something entirely different from what was printed; for instance, saw was pronounced was; words, wan; at, an; sober, soder; remember, remain; because, beauties; justice, jessive; form, from; wands, whines; town, down; beneath, bent; back, bent. Very few words at all was he able to pronounce even incorrectly without an appeal to his glossokinesthetic center. He has since acknowledged to me that he would often stutter over a word to hide his inability to identify it. He writes a fairly good hand, is quick at recognizing figures and objects. His senses of touch, taste, smell, and hearing are well-developed and accurrate. He could copy correctly and could write well from dictation, though he often found it impossible a short time afterward to read what he had written.

The patient is a boy of at least average intelligence, whose visual memory and speech defect combined have not only prevented him from making progress along educational lines, but have also interfered with the proper expansion of personal characteristics. Necessarily his powers of expression and vocabulary are very limited. He has shown wonderful strength of purpose in following up the treatment directed toward the eradication of his defects and the improvement he has made is most gratifying.

The object aimed at in the treatment of this

case, after the correction of the speech defect, was the development of the visual word center in the right hemisphere, and the establishment of functional relationship between it and the auditory word center as well as Broca's center in the left hemisphere. To this end the patient was first taught to use his left hand, as advised by Bastian in the acquired and, later by Claiborne, in the congenital form. He was then made to receive oft-repeated impressions of words through every possible avenue, through his auditory center by hearing words pronounced and hearing himself pronounce them, which last also brought the glosso-kinesthetic center into play, by tracing over words at dictation, at the same time pronouncing them himself, thus bringing all the centers involved in speech in accord at the same time. In addition he was given visual impressions of words in as many forms as possible, written, printed, on paper, on the blackboard, cut out of cardboard, on the spelling board, etc.

His improvement has been most satisfactory He can now read a page of ordinary printed matter composed of the more common words almost as quickly as a person with normal visual memory and is able to read for pleasure, a thing he was never able before to do. Miss Schwarburg, an expert kindergartner, whose assistance I find very valuable in the treatment of the various defects of development occurring in children, reports that his progress in other elementary studies is equally satisfactory.

Prognosis. In those cases in which the systematic individual training is possible much may be accomplished. Medical school inspection and the establishment of special schools for backwarl pupils under competent supervision will, as in other cases of defect, do much for the large number who can not be reached in other ways.

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THE TREATMENT OF ENLARGED PROSTATE AND OF CHRONIC PROSTATITIS WITH ELECTRICITY.*

By J. C. WALTON, M. D., Richmond, Va.

More than six years ago my attention was called by Dr. Snow, to a new method of treating enlargement of the prostate gland, with the Morton wave current; being familiar with the remarkable local and general tonic effects of this current on the tissues and its favorable action on metabolism, and its well recognized power in relieving stasis, congestion and in promoting the absorption of inflammatory deposits, I was favorably impressed with this new method—especially so, as my results in this heretofore intractible condition had been absolutely negative and disheartening. Since then, I have used this method exclusively with the most striking and satisfactory results in all cases, except those due to cancer or tuberculosis, wherein it is contra-indicated, and it should never be used in this class of cases.

"According to McFarland, the prostate gland is a fibro-muscular organ, the homologue of the uterus; it is situated about the neck of the bladder and perforated by the urethra into which its numerous tubular glands empty.

The enlargement usually depends upon true hypertrophy either of the whole gland or one of its lobes.

"Cowell believes this hypertrophy is due to acute or sub-acute" inflammation producing congestion, infiltration of small round cells, with finally, formation of new tissue. After the occlusion of the gland the interstitial hyperplasia may cease, but the retained secretions will keep up the irritation causing multiplication, not only of the cells, but also of the acini. This, he adds, is a plausible explanation of the occurrence of the adenomatous form in from 80 to 85 per cent. of the cases of hypertrophy. Furthermore, the fibrous and fibromatous forms

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occur most frequently in the young.—(Jackson in Journal of Advanced Therapeutics.)

As all of the distressing symptoms of "prostatic hypertrophy" are due primarily to pressure upon and narrowing of the urethra, it follows that any method that will materially reduce the size of this gland and permit free drainage, should be most seriously considered before resorting to hazardous surgical procedures, especially in a class of patients who are in a poor condition for a major surgical operation.

In many of my cases of prostatic enlargement, I have been surprised to find on examination only a moderate degree of hypertrophy, although the symptoms of obstruction were very pronounced; further investigation showed that much of this distress was due to a weakened, relaxed and atonic condition of the prostate, bladder and associated parts; this would be a natural inference as from long suffering and with interference with sleep, these patients are very depressed and in a general run down condition.

The Morton wave current by inducing tissue vibration, with alternate contraction and relaxation, thereby re-establishing normal circulatory drainage, stimulating the circulation and the secretions, increasing elimination, relieving pain and congestion, and absorbing inflammatory exudates and deposits, is the logical remedy for this condition, for it meets every pathological indication; and to Snow is due the honor of perfecting a simple, safe and effective method of successfully treating a disease that has long been the opprobrium of medicine and surgery.

The treatment is pleasant and agreeable, the patient not infrequently going to sleep in the reclining chair on the insulated platform. It is simple in its application and can be used by anyone having a good static machine and understanding the fundamentals of electro-therapeutics.

The patient should be on the insulated platform with the "Snow metallic electrode" in the rectum, and connected to the positive pole of the machine, the negative pole being grounded. Begin with a short spark gap and gradually increase until the patient experiences a decided vibration in the rectum; 20 minute seances daily for about a week, then every other day until entirely relieved.

For chronic prostatitis of specific origin and gonorrheal rheumatism, reverse the polarity and use, in lieu of the metallic electrode a high vacuum glass electrode (Titus) in the rectum. This proceedure in the gonorrheal cases with the correction of strictures and other abnormalities, will often succeed after failure of the usual orthodox remedies. In addition to the actinic effect of this current upon the prostate gland and seminal vesicles, this method gives a thorough massage of these organs by squeezing out the retained secretions through the contraction of the muscular fibres of the affected areas, thereby not only removing the infectious material, but re-establishing normal circulation and securing the benefits of leucocytosis.

As gonorrheal rheumatism is thought to be due to the toxin generated from the gonococci resident in the prostate gland and the seminal vesicles, Dr. Eugene Fuller, of New York City, has been treating these cases of chronic vesiculitis by drainage through a perineal opening, and curretting thoroughly, and he found upon exacining the removed material large numbers of gonococci, and with recovery from the surgical procedure all arithritic symptoms disappeared. These facts seem to establish the conclusion that the gonococci are apt to persist in the prostate gland or seminal vesicles where they thrive indefinitely and pour out their toxins which are absorbed and produce local or general systemic infection.

Not many patients would submit to Fuller's operation; and prostatic massage or stripping of the vesicles are ineffective and often harmful from the mechanical injury resulting from this plan of treatment.

Dr. Edward C. Titus, of New York City, was the first to call our attention to the treatment of these infected cases with the high vacuum glass electroides. Titus has proven that the actinic action of the vacuum tube discharge exerts a direct bactericidal effect upon deep seated gonococci, this being due to the nascent nitric acid and ozone evolved with the actinic discharges which are carried into the tissues to the depth of from 2 to 6 mm. by the action of these high-potential currents.

Titus' results have been confirmed by Snow, Black, Pitcher, the writer, and by numerous other observers. Clinical results show that cases of chronic gonorrhea, and gonorrheal

rheumatism were distinctly amenable to this method of treatment, as proven by the cessation of the discharge, the disappearance of the gonococci, the shreds, the rheumatism and all other evidences of infection.

The recognition and verification of this method by the genito-urinary specialists would prove a blessing to mankind, and it is gratifying to record the opinion of one of the most advanced genito-urinary specialists of this or any other country, who frankly admits his inability to cure these cases without the aid of physical agents, i. e., electricity and vibration.

According to Snow, this current acts as follows—(1) The actinic effect is due to the ozone and nitrous acid evolved at the site of contact of the electrode with the tissues—products of decomposition. (2) the phoretic action of the current whereby these and other medicinal substances are conveyed into the tissues; (3) the effect of the current in inducing local hyperemia, thereby bringing into the tissues involved an increased quantity of arterial blood with an increase of phagocytosis, and (4) the electric action of relatively large ampere currents which may have some action in bringing about the pronounced effects associated with the relief of localized infection.

As the majority of men and boys have or have had gonorrhea, and as statistics state that 70 per cent. of the laparotomies in women are caused by specific infection, and as this disease is considered by many men of no more gravity than a bad cold, no serious importance being attached to it, the case is sadly neglected, becomes latent and is probably never cured; the victims become disseminators of infection and add their quota to the great social evil.

Lawson Tait said that where syphilis had slain its thousands, gonorrhea had slain its tens of thousands.

As a prophylaxis against venereal infection and self-abuse, the writer is a strenuous advocate of circumcision and of education along the lines of prevention. Nothing is to be gained by false modesty, as you have to educate and do the best you can under the existing conditions. Under any method of treatment gonorrhea with its many complications, is a hard proposition to handle and prevention is always better than cure.

I believe that the plan above briefly outlined marks a distinct advance in the treatment of this disease; after much study and experience, I will briefly outline the methods that have given me the most satisfactory results. After first relieving any strictures that may be present, either of large or small calibre, by gradual dilatation with steel sounds and by the absorbing of any inflammatory deposits by Newman's method, the prostate gland and the seminal vesicles are treated directly by the application of a long high vacuum glass electrode in the rectum connected with the Oudin Resonator (high frequency). With the Tesla grounded, the high frequency coil is excited by a 20 plate static machine running at full speed, as the object is to get a large ampere of current.

In inflammatory conditions of the posterior urethra this treatment is alternated with the high-class urethrad electrode applied in the urethra. Seances of 20 minutes' duration should be continued daily until all the evidences of the disease are gone.

References: Jackson, Black, Pitcher, and the writer wishes to especially thank Drs. Snow and Titus for valuable reprints and much other useful information.

MEDICAL ANTAGONISMS.*

By FRANK LEE BISCOE, M. D., Washington, D. C.
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In view of the fact that most papers read before medical societies are purely scientific in character, I wish to digress from this plan that we might put aside, temporarily, case records and discussion of specific cases, realizing that there are matters pertaining to the practice of medicine and to the public health in general, which, though not altogether neglected, are not considered seriously enough, nor brought to the attention of the medical profession quite as often as their importance would seem to indicate that they should be.

It is my intention to call to your notice in this paper some extraneous influences which bear on the practice of medicine, on the public health and on the general welfare of man; and to present to you my own estimate of these influences and of their instigators, and to offer for your consideration some suggestions relative thereto.

These influences have existed since the early history of man, and while it would be interest-

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ing and instructive to study such practices since their inception to the present time, among the people of the world and even among the American Indians and the early settlers of this country, yet to make such an exhaustive study of this subject would be to entail the writing of a very voluminous article; and I shall speak only of the more modern practices and influences, which we will consider under the caption, Medical Antagonisms.

It is said by some that criticism, by regular physicians, of these practices and of these cults, or sects, and of any irregular classes of people who supposedly practice the art of healing, is prompted by jealousy of their claimed success with cases, or by pecuniary loss sustained, or by lack of faith in regular medicine and in the old school.

These I believe are the reasons ascribed to physicians by the goodly percentage of misguided, bewildered and unfortunate people who follow blindly the teachings and leadership of these heterogeneous groups of so-called healers. Indeed, it is a fact that the reasons above stated are held by many educated and intelligent people, although they themselves must be convinced, however, of the lofty character of the medical profession, in virtue of their own allegiance to, and dependence upon, their advice and medication.

These reasons, which to the uninformed, appear to be of substantial character, are, however, without the least foundation of fact, as I shall endeavor to demonstrate.

It is superflous to even attempt a demonstration of the truth and principles of medicine, as practiced by the regular school of physicians, before intelligent lay people and physicians, or to uphold the dignity and character of the medical profession and of the modern physicians throughout the civilized world; and yet it seems that we are neglectful in not doing this in view of the fact that we are custodians of the public health, of the physical welfare of the American race and, therefore, human happiness.

The presence of these influences is due, in a great measure, to our own inactivity and our own neglect in the matter of calling these conditions to the attention of our legislators, and making plain statements to them whereby they may be guided in making investigations and framing laws.

This, to me, seems to be our bounden duty and this is one of the main objects that I have in writing this paper. Furthermore, it is our duty to make known these conditions to the people, that they may be enlightened in matters of such vital importance, and thereby saved much mental anguish and great suffering, and have their dangerous delusions dispelled.

Of course, I realize that many of the followers of these leaders and faiths are excited to the point of fanaticism, and that great efforts are necessary to relieve their minds of certain delusions and misconceptions; and yet, even though a certain percentage will prove to be beyond the reach of persuasion and rational understanding, still it is a duty done and a moral standard set for all the world to see and follow and our recompense shall be that moral satisfaction which comes to all upright, conscientious men of character, and this, to my mind, is the greatest glory that falls to the lot of man.

To illustrate our inactivity in these matters I will state that in reply to a letter to the editor of a leading medical journal, inquiring as to the advisability of initiating a crusade against psycho-therapy, I received a letter stating that in his opinion psycho-therapy was doomed to die a natural death, and that instead of hastening its end, a crusade would only serve to prolong its ultimate inactivity. And here is just the attitude of the profession that it is my hope to change. For while these practices are alive the death rate is increased, suffering prolonged and families horribly decimated. We may give one thousand units of anti-toxin in diphtheria at the end of forty-eight hours and expect to effect a cure; while if the case is allowed to continue until the fourth or fifth day all the anti-toxin in the world may be of no avail. And, so, it is this delay in bringing these matters before the people in an emphatic and plain way, and in bringing them before our legislators that I am interested in; and were these things done promptly, fully, emphatically and fearlessly, not only would we eliminate great obstacles from the progress of scientific medicine and the general welfare of the human race, but we would also prevent many untimely deaths, untold suffering and much unhappiness.

I should like to mention also a letter sent

to another editor of a medical journal asking for his opinion on the subject of psychotherapy, and to state that my letter is as yet unanswered.

It is said by many that we are jealous of the stated successes which attend these healers, and that they cure cases evidently beyond our reach. This is the result of misguided unfortunates who, instead of accepting wise counsel, give themselves up to the persuasion of unscrupulous people, and who are consequently led to believe in impossible things. The day of miracles is gone, and though people possess varying degrees of character and personality, this is the nearest approach to the miraculous, as a miracle is something impossible of human conception.

It is only necessary to state, in refuting the idea that we are jealous of the success of these healers, that it is impossible for them to eradicate diseases which they must admit do exist, except by proper nursing, proper medication and proper surgical interference.

To say that a carcinomatous breast can be cured by a wave of the hand, by praying or by an attempt at persuading the individual that nothing is wrong, is an imposition on the intelligence of the people, and inflicts hardships and suffering on the ignorant and uneducated.

It is impossible by the above methods to relieve an individual of a renal calculus or a ruptured appendix, and I defy any of them to cure a case of arthritis deformans.

These people tell us that our patients die, and this is absolutely true. But we keep records of cases with notations of recovery or death, and I have yet to see a case record of a so-called healer. How can they keep records, when they confess to the fact that they know nothing of medicine? They cannot, therefore, make a diagnosis, and how are they to effect a cure in any case?

Now there are cases that die, cases that recover. Some die in spite of all that medical and surgical skill can do for them, and others will recover even without the aid of the physician. These last named cases are the ones which fall into the hands of the healers at times; and in them they glory, and extol their own virtues to the multitudes only to have others of a more serious nature come under their care and die, whereas, they should have been saved by proper attention.

This is the greatest obstacle in our way in explaining the truth to the people, and while a difficult task, is far from impossible.

A member of a family in New York city had diphtheria, was attended by a regular physician, and died; later another member of the same family had diphtheria, was attended by a Christian Scientist, and recovered. This incident was advertised far and wide and gained many adherents to the faith of Christian Science. This is an example of the unfortunate conditions which we have to combat. While this one case seemed to vindicate Christian Science and discredit regular medicine, yet the truth of the matter is that the mortality in diphtheria since 1900, when Behring, Kitasato, Roux and others produced an antitoxin, throughout the civilized world has been reduced 50 per cent.—incontrovertible evidence, indisputable facts, and unassailable methods. Consider the number of lives saved and consider the rapid strides towards the eradication of this particular disease.

It is a fact that all the great universities of the world have medical schools conducted along regular old school lines. These institutions where there are gathered the learned men of the world in the sciences and the arts; where are centered all the financial and moral support possible for the collection of data and the discerning of facts, for the pursuit of literary and scientific studies, for the dissemination of knowledge, and to set the standard in all branches of learning, have medical schools with laboratories equipped for the study of all branches of medicine and for original research, and have distinguished men in the personnel of their faculties.

And so with these institutions of learning authorized and supported by the governments of all civilized countries, with the moral support of the great majority of intelligent people, setting the standard in all branches of learning, it is a travesty on the intelligence of the masses and immeasurable injury to the poor and uneducated for these healers to flaunt before the faces of learned people their unfounded and unsupported claims of impossible cures. They are committing unpardonable sins against humanity for which, in my judgment, there is no punishment too severe.

It is said, also, that physicians criticize these healers on account of the pecuniary loss sus-

tained; and to the fair-minded, thinking person this claim is almost too ridiculous to need even the slightest degree of consideration.

There is no set of men in the world more charitable than physicians, no set of men more sacrificing, no set of men who are workers of greater good, and no set of men whose morals are higher than those of the great medical profession. After years of preliminary eduation, four years of medical education, and several years of hospital training, the physician casts his lot with the world, and statistics show a yearly competency of $500 for the average American physician.

Rarely does the physician sue for an account, rarely does he insist upon a settlement, and I have yet to learn of an instance of a worthy indigent being denied medical attention. It is a life of self-sacrifice, of devotion to study and to the well being of one's fellowman.

It is the physician who frames the laws of sanitation and hygiene; it is he who establishes hospitals and gives his time and skill to the thousands of free cases that are treated every year, and it is the physician who has worked wonders towards the prevention and eradication of diseases and who is still endeavoring to correct existing conditions.

It is impossible to conceive of any intelligent person presuming to dare, in the face of these facts, to even intimate that the physician practices medicine for financial gain.

A loss of faith in regular medicine and in the old school! Such an absurdity. The physician does not profess to cure all diseases, nor to prevent all epidemics, nor does he profess to understand all diseases; but it is indisputable that many diseases are curable, that epidemics are often prevented, and that we are learning more about diseases with the passing of each year.

One has only to consider the lumbar puncture in spinal meningitis, the operation for appendicitis, the revolution in the treatment of pneumonia, the success attending the treatment of rheumatism, diphtheria anti-toxin, tetanus serum, the discovery of the tetanus and typhoid bacilli, the discovery of chloroform and ether, cocaine andæsthesia and innumerable other discoveries and advances, to be filled with enthusiasm for the progress of medicine and for the preservation of its integrity and character to the end of time.

Who has read a "Doctor of the Old School," by Ian Maclaren, who is not filled with love and respect for the old village doctor, riding his faithful horse, carrying saddle-bags filled with vials of medicine, going about during all hours of the day and night ministering to the sick and afflicted? This little tale, while not representing the modern skillful physician, does depict the character and life of the ideal practitioner of medicine.

During the nineteenth century there existed a set of men who styled themselves natural bone setters. These men pretended to make the people believe that they were gifted with the inherent ability to reduce fractures and dislocations, and that some divine inspiration came to them whereby they were, without previous training or study of anatomy, masters of the art of setting broken bones and reducing dislocations. They created great havoc among the people falling into their hands, but fortunately their set was very short lived and are now almost extinct. I myself saw a sign on a house in Buffalo, N. Y., some years ago which read, "Natural Bone Setter."

Christian Science, a system of religious teaching based on the Scriptures, which originated with the Rev. Mary Baker Eddy about 1866, the application of which is the professed cure of diseases by mental and Spiritual means, is the most colossal fraud of modern times—wonderful in its hold on the people and outrageous in its deception. Originated by a shrewd woman, who surrounded herself with acute business men, it has assumed gigantic proportions, become a rich organization, built beautiful churches, and made Mrs. Eddy and her immediate associates multi-millionaires. It is needless to mention any of the numerous frauds perpetrated on the public by these impecunious and unscrupulous people, or any of the thousands of cases treated by them that have died for want of medical attention, for they are too well known to require reiteration. Imposing on the credulity of weak-minded people and taking advantage of the religious frenzy which they inject into their followers, they have committed the greatest crimes and caused to be erected in the cemeteries everlasting monuments that stand in savage

mockery to commemorate the memory of the most audacious, fraudulent and culpable set of imposters of the present century. I am highly gratified that the Maryland Legislature has passed a law prohibiting any Christian Scientist from collecting a fee in that State, for this is the only way to stamp out of existence a practice which jeopardizes the lives of our own people and I hope that it will not be long before all our States will have passed similar laws.

In passing, I should like to speak briefly of Thompsonianism, originated and instituted by Dr. Samuel Thompson, of Massachusetts, who was born in 1769 and died in 1843. This theory consisted in the belief, first, that the constitutions of all mankind are essentially alike and differ only in the different temper of the same material of which they are composed. That the materials of which all men are formed may be resolved into the four elements. That earth and water constitute the solids of the body, which is made active by air and fire (meaning food and medicine), and that this last element a peculiar manner gives life and motion to the rest, and when entirely overpowered, from whatever cause, by the other elements, death ensues.

Second. That all diseases, however various the symptons, and different the names by which they are called, arise directly from obstructed perspiration—that obstructed perspiration may be caused by a variety of conditions originating from cold.

They believed primarily, and almost solely, in the use of heat and vegetable drugs, and are emphatic in the statement that all diseases arise from obstructed perspiration and that all bodily ills of a lifetime are attributable to this cause, without any hesitation, and to this latter belief is due their abhorence for the use of minerals.

The followers of Thompsonianism were many, and like all these practices caused widespread consternation among the people. The career of Thompson was unique, and even to this day Thompsonianism has its adherents; and lobelia and rum sweats are retained by some with enthusiasm.

Somewhat akin to Thompsonianism, yet at the present time developed in many ways until it is on a comparatively safe and sane basis is homeopathy. While not a menace to the public health, as I shall endeavor to point out, yet the practice of homeopathy is misleading to the public and is, in a way, a deception.

Originated by Dr. C. F. S. Hahneman, who was born at Leipsic in 1755 and died in 1843, it has assumed large proportions, has spread throughout the civilized world, enrolling hundreds of physicians in its cause, and established many homeopathic medical schools and hospitals. Their well-known motto is *"Similia similibus curantur"*—"like things are cured by like"; and their materia medica contains a list of symptoms and the drugs used for each particular symptom. This is unscientific—a meaningless jumble of terms, and drugs which are applied at random to various so-called symptoms, regardless of disease.

Science is known to the well-established world of learning as systematized knowledge, and this fact demonstrates the unsoundness of their system. Says Hahneman: "The medical world was in darkness until I arose." Like cures like. What intelligent man could honestly advocate the bromides or aconite for a feeble heart, or turpentine for a case of acute nephritis?

Their position is untenable in that it is groundless, and their attitude towards the public is not sincere, for we know that instead of the infinitesimal doses which they claim to prescribe, they are using the same drugs in the same doses as employed by the regular school of medicine.

I will say this for the homeopathic school, that they do recognize modern pathology and bacteriology, and that they practice the same principles and methods of surgery as are in vogue in the old school. This leads me to believe that the practice of homeopathy is undergoing a radical transformation and that soon they will be practicing old school methods and that they will be compelled to publicly recognize old school methods, discard their so-called system and join the ranks of the regulars.

This would come soon, I believe, were it not for the fact that they have a large following. From other obvious reasons, too, it is to their advantage to still retain the name homeopathy.

An important present-day medical antagonism is so-called osteopathy, a theory of diseases and a method of cure advocated by a Dr. A. T. Still. It rests upon the supposition that most diseases are traceable to deformation of some

part of the skeleton (due generally to accident) which by mechanical pressure on the adjacent nerves and vessels interferes with their action and with the circulation of the blood. As a remedy a form of massage is employed.

This set of healers are specialists, and yet they are either unable or unwilling to define their specialty. They style themselves Doctors of Osteopathy and treat every one who applies to them for aid. It is absurd to consider for an instant that any system of massage can cure typhoid fever, can remove the plasmodium of malaria from the blood, or conceive of an hepatic abscess being treated excepted by evacuation of the pus through an abdominal incision. How is it possible for them to relieve constipation by bending the vertebral column until it cracks, or by abdominal massage, when the constipation is caused by a large uterine fibroid pressing on the gut? Here again we see where great damage may be done by ignorant healers attempting to remove a cause which they are not capable of diagnosing. The patient is treated according to their methods, not only without beneficial results, but with untold injury and possibly fatal termination, from lack of proper and prompt medical attention or surgical interference.

Of course, we all admit that we employ masseurs in our daily practice; and it is an acknowledged fact that massage is indicated and effective in a small percentage of cases, as an adjunct; and this is the field of usefulness of these self-styled doctors of osteopathy, who are no more or less than expert masseurs, who should be compelled by law to practice only under the advice and direction of regular physicians.

And now we come to the youngest and most modern of these fanciful healers. In its infancy, it is true, and originated by a member of the Episcopal Church and with the moral support of many people, yet on account of these things, and also from the fact that its incipiency occurs during our lifetime, we are specially concerned, less it develop and grow to the gigantic proportions which characterize some of its allied and kindred cults. I allude to the practice of psycho-therapy. This emmanuel movement, as it is termed, was originated by the Rev. Elwood Worcester, of Boston, Mass., and consists in the following:

1. As an attempt to bring the mind into a normal and healthful condition, freeing it from such enemies as fear, anger, hallucinations and fixed ideas.

2. As an attempt to improve physical conditions by mental conditions. They assume that the majority of functional disturbances are caused by mental disturbances. That when the mind is restored to a state of health and peace, physical weakness and painful symptoms very frequently disappear.

3. The scope of psycho-therapy as an independent remedial agency is limited to the above class of disorders. It is of little apparent value in positive insanity and in progressive mental diseases, and that it is useful only as a subsidiary means of combating true diseases.

This is, I believe, a succinct statement, of the status of psycho-therapy.

It is to be regretted, for several potent reasons, that this movement was ever thought of.

Begun by a clergyman and in close connection with a grand and glorious Church, it is bound to live and grow, and I venture to predict that before its death knell has been sounded its following will have been thousands, its misrepresentations will have been far-reaching, and the number of healers connected therewith will have been hundreds.

It is unfortunate, too, that this movement has the moral support of church-going people, for they are the most susceptible of all people to influences, both good and bad. Taking advantage of this fact these healers will entnuse their followers to the point of fanaticism, make them believe that there is no disease except as it rests in the imagination of a disordered mind, and convince them that the healers themselves are divine emmissaries endowed with superhuman powers by the Almighty. Thus it is easy to understand that if this delusion is not promptly dispelled there will come widespread disaster to thousands of people.

It is said by these healers that they wish to work in harmony with the physicians and treat only such cases as are referred to them as having no pathological lesion.

I predict that they will be attempting their cures permiscuously, for if there is lesion, how and why should any one be treated by them?

and you will find that although they are not educated physicians they will, eventually, pretend to believe that disease does not exist, and that, therefore, they will be imposing on thousands of people who are in need of medical attention.

It is to be regretted that these healers have enlisted in their cause some few physicians of note and ability, and it is this that I wish to call to your attention.

They are attempting to fortify themselves under the cloak of the medical profession, to gain our confidence, and then use the moral support thereby gained as a convincing argument to the people; and soon, if this condition is allowed to continue, we will see a great horde of healers everywhere, practicing deception on the people. Then it will be almost too late to intervene, for great damage will have been done, and our only consolation will be the thought of a duty neglected.

Let us consider for a moment just what these healers profess to do. They claim to treat only those who are free from pathological lesions. That removes the individual from the domain of medicine and surgery, and calls for absolutely no service from a physician. Why, then, in view of this fact, should the physician in any way be associated with these healers? This is the foundation of my attempt and hope to disassociate the medical profession from these psycho-theraputists; and so I say that they are confronted with a sociological problem which, undoubtedly, is within the scope of the calling of the clergy.

It is the duty of physicians to improve the hygienic conditions of State and country. It is the duty of the clergy to improve the morale of the people. The clergy is doing this, and I believe will always do so, in the attempt to better domestic conditions, promote sobriety and urge honest living. This, in my opinion, is the principal duty of the minister of the gospel.

The calling of the Church and the calling of the profession of medicine impose upon their individual exponents work and duties distinctively unlike. They are absolutely incompatible, and the only occasion which brings the professional man together with the clergyman in the performance of duty is in the death chamber scene, when medical skill comes to be of no avail, and the clergyman is called in to give consolation to a dying soul.

I do not countenance the use of hypnotism in the treatment of weak-minded people and hypochondriacs, and people suffering mental depression from grief or worry; for the moment an individual is hypnotized he is reduced to an abnormal state and this, to my mind, is not good practice, and savors of homeopathic doctrines.

It would consume too much time to enter into a discussion of hypnotism, either from a scientific standpoint, or as a remedial agency, and I shall dismiss the subject with the recommendation that a law be passed prohibiting public exhibitions of hypnotism, which subject people to the ridicule of their fellows and result fatally in many instances.

To conclude the matter of psycho-therapy I will state that it is a dangerous movement jeopardizing the public health; that there is an acute difference between the normal mind and insanity, which requires the most highly developed skill to appreciate and treat; and that the leaders in this movement will become a powerful influence, attempting the cure of all forms of disease and disability.

Medical antagonisms will probably always exist, spasmodically, and yet if I have succeeded in stimulating your interest in these matters and made plain the necessity for counteracting these influences, I shall consider that a great deal has been accomplished.

Of course, there are certain normal adults who will prescribe to every new drug and every new form of healing, but it is for the weak minded and uneducated people, and especially for the children, that I appeal to you; and any healer practicing among these classes should be held responsible.

I would urge that every one wishing to practice medicine, in any form whatsoever, should be compelled to exhibit a certificate of due preliminary education, be a graduate of some reputable regular school of medicine, and pass an examination before a board of medical examiners, as appointed by the several States.

I wish to repeat and emphasize the necessity of protecting the unknowing minors from those atrocities.

In conclusion, I will state that the medical profession, as custodian of the public health,

should advise the State with regard to all matters affecting the physical well-being of the people; and that it is the duty of the State to guard the welfare, and shape the destiny, of the human race.

The Farragut, Seventeenth and I Streets.

Book Notices.

Diseases of Children. By HENRY ENOS TULEY, M. D., Professor of Obstetrics, University of Louisville, Medical Department, etc. Illustrated. Baltimore. Southern Medical Publishing Co. 1909. 8vo. 653 pages. Cloth, $5; half leather, $6.

There is need for this up-to-date book on diseases of children, because of its specially practical caste—useful for study and also for its good bedside teachings. As the infant and young child are so dependent upon milk as a diet, and even in treatment, the author insists with force upon the establishment of milk depots where certified milk may be placed within the reach of the poor. The leading points of symptomatology are well brought out, and special attention is given to matters of therapeutics—many valuable and well tried formulæ being in an appendix, in addition to those in the text. The book is a good one for the practitioner, as also as a text-book. The typography of the book is attractive.

Principles of Pathology. By J. GEORGE ADAMI, M. A., M. D., LL. D., F. R. S., Professor of Pathology, McGill University, etc.; and ALBERT G. NICHOLLS, M. A., M. D., D. Sc., F. R. S., Assistant Professor of Pathology, and Lecturer in Clinical Medicine, McGill University, etc. **Vol. II. Systemic Pathology.** With 310 engravings and 15 plates. Lea & Febiger. Philadelphia and New York. 1909. Large 8vo. 1,082 pages. Cloth, $6 net.

The first volume was published 1908, and indicated the exactness and completeness of the work undertaken. That volume related to General Pathology while the one under notice now relates entirely to Special Pathology—a proper understanding of which enables the practitioner to appreciate the relation of causes and effects. Volume II., from the pathological standpoint, considers seriatim, the cardio-vascular system, the respiratory, alimentary and nervous systems, the ductless glands, the urinary, the reproductive, the tegumentary, the muscular and the osseous systems. While the claim of the authors is that the work is not exhaustive, it is by far the most complete work on the subject of special pathology in the English language. The excellent index is a great help for ready reference to a subject.

Diseases of Women. By CHARLES GARDNER CHILD, Jr., M. D., Clinical Professor Gynecology, New York Polyclinic Medical School and Hospital, etc. **Medical Epitome Series,** edited by VICTOR COX PEDERSEN, A. M., M. D., New York. Illustrated with 101 engravings. Lea and Febiger. Philadelphia and New York. 12mo. 210 pages. Cloth, $1 net.

This book well epitomizes the subjects included in text-books, etc., on Gynecology. Debatable matters are not indulged in—thus saving a great deal of space. Illustrations are plentifully used where they can help the text. Conditions are well described, points of diagnosis clearly made, and suggestions as to treatment are well brought out—both as to operative intervention and the use of pharmacopœial remedies. Several pages of questions are added for self review, or else for class-room purposes, and a good index is appended.

Clinical Studies for Nurses. By CHARLOTTE A. AIKENS, formerly Superintendent of Columbia Hospital, Pittsburgh, etc. Philadelphia and London. W. B. Saunders Co. 1909. 12mo. 510 pages. Cloth, **$2 net.**

This book scarcely equals our ideal of a book for nurses. It is all right for the nurse to be acquainted with medical terms, etc., but there are many pages of the book that give no details or suggestions as to what the nurse may or should do under given conditions. Neither patient nor doctor sends for the nurse to describe convulsions, epilepsy, paralysis agitans, etc., etc., but to prevent injuries during attacks, or in painful affections, to suggest and to carry into effect measures that tend to relieve until the doctor comes, etc. Of course, there is no objection to the acquiring of knowledge by the nurse, and she should be taught the difference between plainly dangerous and non-dangerous conditions. What is said in this book with reference to practical or clinical nursing is all right; but practical bedside, helpful nursing is the real duty of the nurse, who should be able to give every detail of facts to the physician on his daily rounds. We have seen better books on clinical nursing.

Editorial.

Medical Legislation in Virginia.

The Legislative Committee of the Medical Society of Virginia has just issued a pamphlet on the "Relation of the Medical Profession to the Public Health" which is so instructive and suggestive of what should be done by the General Assembly now in session in this city that we would be glad if doctors could and would induce their legislators to read it.

The introduction clearly sets forth the fact that doctors, in seeking repeal of State license taxes on practitioners, are in no sense trying to "get out paying" their just and equable dues to the State, but simply calling for the rectifying of a moral and legal wrong long endured by the profession; and refers to the valuable paper in the pamphlet of George Bryan, Esq., member of the Richmond Bar as sustaining the contention that specific license taxation of doctors is no more just or proper than would be such taxation if placed on ministers, teachers, editors, etc. If revenues for State expenses are not sufficient, make proper assessments on other material values than on the license for the doctor whose life work is practically that of the health officer preventing diseases, etc.

Of course, the doctor should be willing to comply with the Vital Statistics Registration law of the State, and in every way give his assistance to properly organized health authorities in order that devastating endemics and epidemics of disease may be prevented or abated.

In the pamphlet of about 20 duodecimo pages, Dr. Stover, Chairman of the Legislative Committee, forcibly discusses "Should Virginia Impose a License Tax on Physicians?" And he gives "Some Evidence Furnished by a Brief Historical Review" why such license tax should not be imposed. Only four other States impose such taxes, namely, Georgia, North Carolina, Delaware and Louisiana. In Mississippi, Montana, Illinois and Florida, the license tax has been repealed in recent years; and in Texas, where a test case was made in the courts, it was proven unconstitutional.

This paper by Dr. Stover is followed by one by Dr. W. Lowndes Peple, of Richmond, showing up the "Physician as a Public Educator."

Then a reprint is made of a paper read before the Medical Society of Virginia at Roanoke, by Dr. H. Stuart MacLean, of Richmond, on the "Relation of the Medical Profession to the State Board of Health," which clearly shows that such a board would be powerless for good unless it has the co-operation of the profession.

Dr. E. C. Levy, Chief Health Officer of Richmond, adds a letter strongly confirmatory of the statement that health authorities are dependent upon the profession for assistance, and refers to facts showing how vastly the health of the city has increased since he has secured the co-operation of the profession.

The conclusions of the Legislative Committee's pamphlet, as given on page 20, 21 and 22 are logically drawn, and convincing to any unprejudiced mind, that the license taxes on Virginia practitioners should be repealed by the Legislature now sitting.

The usual cry of "not enough money in the State's treasury" to warrant repeal has, of course, been raised. But if there is enough money to allow any increases at all in appropriations for other causes, there is surely enough to rectify a long existing and patiently borne wrong to the profession. To repeal this license tax would lessen the State's income by less than $40,000. A more equable assessment on property taxable values in the State would bring in an income much in excess of this amount. Increased appropriations to the State Board of Health, to hospitals, etc., are all right; but the imposition of the license tax on the profession, which is already laboring so hard to improve the healthfulness of the State, is absolutely wrong in principle, and should no longer be imposed.

We again ask for the thoughtful, careful reading of every line of this pamphlet of the Legislative Committee of the Medical Society of Virginia.

Virginia University of Medicine.

It may possibly be that the destruction of the buildings of the University College of Medicine of this city, January 6, 1910, with all the accumulated apparatus for laboratories, etc., aggregating a money loss of about $150,000, will prove a blessing in disguise. While arrangements have been made for continuance of the courses of instruction through the term to end in May, and to graduate classes under the present corporation title, it is probable

that amalgamation with the Medical College of Virginia will be effected; and it is possible that arrangements may be made whereby the Medical Department of the University of Virginia may also combine with the medical colleges of this city to form one great Virginia University of Medicine.

Under present arrangements, it is practically agreed that at the end of the 1910 session of the University College of Medicine and of the Medical College of Virginia, the Faculties of each shall resign their professorships so that an entirely new Faculty for the amalgamated institutions may be formed, to begin their duties as usual during the fall of 1910. The new organization is to consist of schools of Medicine, Dentistry and Pharmacy, and is to be conducted on the same elevated plane as has been adopted by the best of colleges in the past few years.

The Medical College of Virginia has been in existence for about seventy years as distinctly a State institution, with a Board of Visitors composed of life tenure gentlemen appointed by the Governor of Virginia—vacancies by death or resignations being filled by the same authority. It was about the only medical college in the South that ontinued its courses of instruction during the entire Confederate War; and its graduates served well the purposes of the Confederacy in supplying surgeons and assistant surgeons for the Confederate service. It has regularly received an annual appropriation of a few thousand dollars from the State of Virginia—the building itself belonging to the State. Between 1895 and 1900 it added schools of Dentistry and of Pharmacy.

The University College of Medicine was founded by the late Dr. Hunter McGuire and associates, in 1893, as the College of Physicians and Surgeons, but before the end of the first session, because of the added Schools of Dentistry and Pharmacy, changed its title to its present corporate name. It at once assumed the advanced position of the day as to requirements for matriculation and graduation, to which standard other Southern Medical Colleges gradually came. From its foundation, the University College of Medicine grew rapidly in favor and patronage—drawing students from many States. From its three schools, through the present session, there will have been fully 1,000 graduates, scattered all over the United States. It is not a State institution—receiving no monetary assistance from the State treasury.

While in no sense would we appear as obstructionists to any proper plan for amalgamation of the interests of the medical institutions of Virginia, which might result in one grand University of Medicine, we should not overlook the wish of graduates who have their diplomas from the different institutions, and desire that their Alma Mater names shall not be entirely lost sight of in the future. The Alumni Associations should have a voice in the naming of the new institution; and we are not afraid that proper concessions would not be agreed upon by all concerned.

The day has come when medical colleges at least must be in cities, where clinical material, etc., is abundant. The loss of the University College of Medicine by fire has awakened a public regret which is remarkable; and has resulted in a general desire to organie in this city the best of medical colleges in the South. A number of citizens have come forward with generous offers of monetary assistance to help found such an institution in this city; and it is to be hoped that the clinical departments, at least, of the Medical Department of the University of Virginia, will consent to removal to this city as a part of the grand Virginia University of Medicine, which sooner or later, under this or some other name, will surely be established in Richmond. The consolidation of the three medical institutions of this State—each of which has its excellent record and broad influence—like the combinations of various business enterprises of to-day throughout the country into distinct corporations, is compelled to prove successful. Running expenses of the three will scarcely exceed more than one and a half times those of one; the number of matriculates will be greatly increased as compared with either of the three at present; the combination of laboratories and equipments would be made more valuable.

The suggestion as to combination of the three institutions now existing is not a new one. It has been under unofficial consideration for a year or two. If the conflagration of the University College of Medicine building results in the culmination of harmonious plans for the

triple organiations into one, then the apparent disaster will have truly proven a blessing in disguise.

Until more definite action is taken by the Board of Visitors of the Medical College of Virginia and the Trustees of the University College of Medicine, upon the recommendations of the respective faculties, we cannot speak of details.

The Cancer Problem.

The day of *preventive medicine* is at hand. The profession, as well as the laity, are recognizing the fact, as shown by the more and more popular demand for efficient health boards in States and cities, towns and counties for the prevention of infectious diseases. The wonderful advances in the past few years as to the prevention of epidemics of yellow fever, the lessening of the ravages of diphtheria, the education of the people as to the causes and treatment of tuberculosis, etc., have aroused public attention to these matters, and this has resulted in the co-operation of communities with the doctors in the saving of untold numbers of lives.

The profession again comes before the world to tell them of the prevention and curability of cancer, which is one of the commonest of destroyers of health and life. It may not be that the means at hand at present for the cure of cancer accords with popular wishes, for most people are naturally afraid of the knife until the stage of hopelessness is reached when it is too late to give help.

The forceful presentation of this subject by Dr. Southgate Leigh in this issue is a paper we wish all doctors would read, and convey the information derived from it into the homes of their patients. It awakens the suggestion of a broad field in every community for the pathologic diagnostician. Even if the cancer cell cannot be positively identified at the time, another examination may be called for, which may develop a suspicion of the malignant character of the growth. Under such circumstances, it is better then to refer the case to the surgeon, rather than wait for more positive evidence. Operation at this stage, in many instances, may be done with local anesthetics, if general anesthesia would appear too dangerous. Nothing is more positive than that cancer, in its beginning is a purely local trouble, which, if thoroughly eradicated, saves progression until, if let alone, it sooner or later involves vital organs, or tissues so extensively that it becomes useless to attempt any remedial measure. Perhaps, as the Doctor suggests, some anti-cancerous sera may yet be found, but until then, let the physician advise prompt resort to efficient surgery.

The time has come when the profession should arouse in the public mind a sentiment in favor of early attention to any suspicious sore or growth. It is proper that the secular press should take up the subject, and that competent members of the profession, in public addresses, etc., should help to educate the people at large on this all-important matter, and thus keep them out of the hands of quacks and charlatans. If a crusade were begun and continued on this subject, as it has been carried on for the past few years with reference to tuberculosis, like amount of good would result.

The Virginia State Board of Health

Held its regular annual meeting in the offices of the State Health Department, Richmond, January 5th, the President, Dr. Rawley W. Martin, of Lynchburg, in the chair. Dr. S. P. Latane, of Winchester, was elected Secretary in place of Dr. Charles R. Grandy, of Norfolk, resigned. Dr. Martin was re-elected President, which office he has held since the organization of the board. One of the most interesting reports received and adopted by the board was that of the Tuberculosis Committee, which told of the most excellent work being done at the Catawba Sanatorium in Roanoke county, and established the fact that it fully justified the expense incurred by the State. After this report, the board heartily endorsed the proposition made by Dr. Ennion G. Williams, State Health Commissioner, for enlarging the scope of the institution.

Dr. C. C. Coleman,

Formerly of Buena Vista, Va., has moved to Richmond and is associated in practice with Dr. J. Shelton Horsley.

Gray's Glycerine Tonic Compound is indicated after simple surgical operations, as under its tonic and reconstructive influence the vital functions are restored to normal activity.

The Lynchburg Medical Society

Held its annual meeting January 3rd, Dr. H. W. Dew presiding. The election of officers resulted as follows: Drs. George J. Tompkins, President; John J. Lloyd, Vice-President; V. V. Anderson, Secretary; J. Paulett Clark, Treasurer. Drs. E. F. Younger, Rawley Martin, and James Morrison were elected chairmen, respectively, of the committees on program and entertainment, legislation and public health, and board of censors. The Committee on Legislation was instructed to see the local representatives in favor of the proposed bill for removal of special license tax on doctors, and has already reported favorably. After the report of some interesting clinical cases and program for February, the meeting adjourned.

The Lancet-Clinic,

Of Cincinnati, one of the oldest medical publications in the United States, with the beginning of the year, entered upon its one hundred and third semi-annual volume in a much enlarged form. As the policies adopted by this journal in the past are to be maintained, and as "the exponent of independent medical thought in the Great Mississippi Valley,' we bespeak for it in its new form an even greater success than formerly.

The Patrick-Henry Medical Society

Met at Martinsville, Va., January 8, 1910. A number of papers were read and discussed, and several clinical cases were reported. Officers elected for the ensuing term are: Dr. J. Russell Perkins, Spencer, Va., President; Dr. L. C. Dickerson, Stuart, Va., First Vice-President; Dr. L. E. Fuller, Sandy River, Va., Second Vice-President; Dr. J. M. Shackelford, Martinsville, Va., Secretary and Treasurer. The next meeting will be held at Martinsville in April.

The Piedmont Medical Society

Held its last regular meeting in the University Hospital, Charlottesville, Dr. James T. Walker, of Barboursville, presiding. After the discussion of a most interesting paper by Dr. Stephen H. Watts on "Some Remarks on Surgery of the Gall-Bladder and Duct," the members were invited to dine at the hospital.

Dr. B. B. Bagby.

It would seem that the appointment of Dr. B. B. Bagby, of West Point Va., as a delegate from the Medical Society of Virginia to the Hookworm Conference in Atlanta, is a most happy one, as the doctor was one of the first doctors in the State to treat a number of these cases and call the attention of the profession to same.

The International American Congress of Medicine and Hygiene

Will be held May 25th, in Buenos Aires, Argentine Republic. The official languages of the congress will be Spanish and English. For further information, address the Secretary of the United States Committee. Dr. Alfred Reginald Allen, 111 South Twenty-first Street, Philadelphia, Pa.

The American Journal of Clinical Medicine,

With its January issue, enters upon its seventeenth volume. This journal, in a new dress and with an increased number of pages devoted to editorials, articles, notes, etc., will be found an unusually interesting number.

For Sale.—A 38-inch wheel, cushion-tire automobile for $450. In good condition and will do the work. Full particulars and reason for selling upon application. Lock Box 122, Smithfield, Va.

Obituary Record.

Dr. Howson White Cole

Died at his home in Danville, Va., January 8th, after an illness due to old age. He was born in Pittsylvania county, December 11, 1830, and received his academic education at Caldwell Institute, Greensboro, N. C., and Emory and Henry College, Virginia. Deciding upon his father's profession, Dr Cole first attended lectures at the Medical College of South Carolina, and afterwards graduated from Jefferson Medical College, of Philadelphia, in 1854. After serving through the Civil War, he entered the drug business, in which he remained until about five years ago, when he retired from active work. He is survived by two sons—Dr. H. W. Cole, of the United States Navy, and Mr. L. D. Cole, of Oregon—his wife having died many years ago.

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Original Communications.

ACTINOMYCOSIS: REPORT OF TWO CASES FROM VIRGINIA,*

By HARVEY B. STONE, M. D., University, Va.
Adjunct Professor of Surgery and Gynecology, University of Virginia; Assistant Surgeon to the University of Virginia Hospital.

Among the many cases of an infectious nature constantly being treated, actinomycosis is one of the least frequent, yet within a year two cases have been met with in the surgical service of the University Hospital. It is the purpose of this paper to report these cases with a brief commentary.

Case I. Farm laborer, age 38 years. Admitted Feb. 13th, 1908. Patient complains of swelling on right side of jaw, which began two months ago. His family history is unimportant except for the fact that his uncle, two aunts and his wife died of tuberculosis. During the patient's past life there has been no disease or illness bearing on the present trouble. The onset of the present illness began about two months ago when the patient noticed swelling and pain in the right maxillary and temporal region spreading gradually to the upper cervical region. During the disease the patient has had night sweats. At the present time there is a decided mass of board-like hardness extending from above the level of the zygoma to several cm. below the border of the lower jaw in the right temporo-maxillary region, and from behind the lobe of the ear forward to within 1 cm. of the angle of the mouth. The induration fades away gradually at the periphery of this mass, there being no definite line of demarcation. The skin over this area is purplish and there are two or three small sinuses in the neighborhood of the angle of the jaw which have persisted since incisions were made by his physician. Patient's incisor teeth can be separated only about a centimeter and chewing is extremely difficult; the teeth are in bad condition and the muscles of mastication are extensively involved in the inflammatory mass. There is a purulent discharge containing typical sulphur granules which, when examined under the microscope, were discovered to be composed of the ray fungus.

On February 18th the patient was operated upon. Even under ether the teeth could only be separated about 1-2 of an inch. The abscess on the cheek and the right side of the neck was opened and the entire indurated mass was incised and spread apart with a clamp. The wounds were irrigated with bichloride and packed with iodoform gauze.

During the patient's stay in the hospital he was dressed every two or three days—each time the wounds being irrigated and repacked with iodoform gauze. Attempts were made during this period to prize open the jaws by having the patient force a wedge between his teeth. Potassium iodide in large doses was given internally. He was discharged on March 20th in good general condition. All of the sinuses resulting from operation had closed and he had gained in weight, but there was still considerable stiffness in opening the mouth, although this was much improved over his condition on admission. Recently this patient has been heard from and is entirely well. The mouth opens normally and the lesions are well healed.

Case II. Farmer, age 50 years, admitted November 2, 1908. He complained of a tumor of the jaw, which was diagnosed as sarcoma or tuberculosis of the jaw by his physician. Family history of tuberculosis in father and paternal grandmother; otherwise negative. Past history is good and uneventful. Present illness began a month before admission with a little nodule the size of a cherry developing posterior to the angle of the jaw on the left side. This enlarged for several days and inter-

*Read before the Southwest Virginia Medical Society, held at Roanoke, December, 1909.

ferred with patient's ability to chew. It was first treated by painting with iodine, and later incised, a small amount of pus being evacuated. The lesion was never very painful, although more so at night. Patient had night sweats during the course of the disease. The process continued to spread and extend, and patient was sent to hospital. Here, on examination, sulphur granules were found in pus exuding from the large indurated mass; and these proved microscopically to be colonies of ray-fungus. The opening of the jaw was considerably impaired. The mass was freely incised and curetted, pus with numerous sulphur granules being evacuated. A loose molar and the root of the wisdom tooth on the left side were pulled. The wound in the infected mass was irrigated with bichloride solution (1-1000) and packed at intervals of every two or three days after operation. Another small actinomycotic abscess formed back of the left ear, which was similarly treated. This patient was also given iodide of potassium internally. On November 25th the patient was discharged with only small sinuses at the site of the operative wounds and in much better general condition.

In October, 1909, this patient returned to the hospital on the medical side, for a heart lesion which had developed since his last dismission. His jaw showed no signs of previous trouble except well healed inconspicuous scars, and the ability to open the mouth is as great as normal.

There are certain facts in these cases which we wish to emphasize. The family history of both patients was definitely tuberculous, and both had night sweats, like those of tuberculosis, during the disease. No mention of such facts in other cases has been made in any of the references consulted. The occurrence of these conditions here may of course be a mere co-incidence, and certainly no general inferences can be drawn from two cases; but there are many points of similarity between tuberculosis and actinomycosis. Both are chronic lesions, of slow progress and long course, characterized by the production of masses of inflammatory tissue, sinus formation, and tissue necrosis. The ray fungus and the tubercle bacillus are likewise closely related in the biological scale. It would not then be surprising if a concommitant symptom of tuberculosis, such as night sweats, should occur in the similar condition of actinomycosis, nor would the more important fact seem strange that families of known predisposition to the tubercle bacillus should likewise fall victims to the actinomyces. At any rate, there is sufficient suggestiveness in our cases to warrant the further observation of these points in the future.

It will be observed that both of our cases were engaged in farming, in the valley of Virginia. Emphasis has been laid on the fact that agricultural pursuits are the occupation of most victims of actinomycosis, but this is controverted by several recent authorities, notably by Shiota, of the Imperial University of Tokyo. In the *Deutsche Zeitschrift fur Chirurgie*, September, 1909, this author presents 55 cases, which are there reported for the first time, with a very valuable discussion of the whole subject, and a most extensive bibliography. A considerable part of the paper is devoted to the biology and morphology of the actinomyces, most of which is of interest chiefly to the bacteriologist. Certain of these observations are of importance clinically, however. Thus the inoculation of the organisms into the tissues on straws, wheat beard, kernels of grain, etc.—the generally accepted mode of infection—is granted as an indubitable fact; but it is also maintained that the fungus often leads a saprophytic existence in the mouth and intestinal tract and may find entrance through any damaged point, not being at all dependent upon the presence of a vegetable foreign body for its ingress. Shiota has also proved by experiment on animals that actinomyces may persist encapsulated in the tissues of animals for over two years, even when causing no reaction, and at the end of that period be alive and artificially culturable. This fact casts light upon the chronicity of the disease, and more especially upon its characteristic habit of recurrence after long periods of apparently complete cure. Among other points discussed, the author notes that the color of the colonies called "sulphur granules" may be gray, yellowish, whitish, smoky, or green, but that none of his cases were of the bright yellow color considered classic.

Dividing his cases into the usual classes—head and neck, thoracic, abdominal—Shiota finds, as have others, a large preponderance in the first group, the numbers being respectively 34, 3 and 18. The theory first advanced by Israel, that carious teeth may be the portal of entry is rather adversely criticized. There were 32.3 per cent. of Shiota's cases with perfectly

sound teeth, whereas, of 714 other patients under treatment for diverse conditions not connected with the mouth, only 31.4 per cent. had sound teeth. Further evidence that infection is not prone to travel by the pulp-canal of the teeth is adduced from the great rarity of osteomyelitis of the jaw as compared with the frequency of periosteal involvement. However, bad teeth play some part by furnishing culture beds, and by exciting local reaction in the surrounding gums, which affords a portal of entry.

Comment is made upon the frequency with which the muscles of mastication are involved in induration, preventing the opening of the mouth. This is due to the point of origin of disease of the facial type, which usually first appears at the anterior margin of the masseter near its insertion into the lower jaw and thence spreads downward and backward. The neck is always involved secondarily to the face, in the opinion of Shiota, although the lesion in the latter region may be so trifling as never to be noticed, or so long healed as to be forgotten.

The disease in the head and neck region is frequently wrongly diagnosed. Sarcoma and tuberculosis are the most common mistakes. Actinomycosis complicated by a mixed infection may present all the clinical signs of an acute inflammation. Such cases may be mistaken for periodontitis, alveolar abscess, difficult eruption of a wisdom tooth, etc., and the demonstration of the fungus may be quite difficult in these instances.

The prognosis in the head and neck cases is much more favorable than in those of other localities. There is a distinct tendency toward spontaneous healing. Two of the cases reported were not operated for good incidental reasons, but recovered nevertheless. This is somewhat offset by the well-known frequency of recurrence, even after long intervals. Of Shiota's 34 cases in this region, three died, three were lost sight of, and twenty-six have been cured for periods of from one to seven years. Of the deaths, one was from invasion of the base of the skull, one from pneumonia following operation on an actinomycotic abscess of the tongue, and one from intercurrent infection. Hence the direct danger to life of these cases is quite small.

In considering the question of treatment, the author summarizes an overwhelming variety of methods which have enjoyed more or less vogue. Thus, in addition to operation various internal medicaments have been used—potassium iodide, iodopin, and other similar iodine preparations, arsenic, calomel, thyroid extract, etc. Local application such as gray salve, potassium iodide salve, tincture of iodine, have been employed. The list of local injections is something astonishing: to cite only a part—chloride of zinc, carbolic acid, carbol-glycerine, iodoform glycerine, methyl violet, salicylic acid alcohol, boric acid, 95 per cent. alcohol, lysol, and other chemicals, tuberculin, anti-streptococcic serum, glycerine extract of actinomyces culture, etc. Antiseptic washes, the X-ray, and electrolysis have also been tried. Shiota then narrates his own experiments and conclusions. No attempt at total excision, such as is practiced in malignant diseases, should be made unless the lesion be very small, circumscribed and early. Abscesses and fistulae are freely incised and curetted. Diseased periosteum is left to take care of itself. Usually repeated operations are necessary. Indurated masses are injected with silver nitrate solution, 3 to 5 per cent. This temporarily causes pain and swelling, but when these symptoms subside in a few days, the patient is usually much improved. Injections are repeated at intervals of one to two weeks. Many of the author's cases were healed by these methods with a minimum of scar. Shiota saw no benefit from the internal administration of potassium iodide, which he tried in only six cases.

In discussing the less frequent occurrences of the lesions in thorax and abdomen, the opinion is expressed that such infections are never metastatic, but proceed by direct continuity from some portal of entry in the œsophagus, bronchi, or gut. These cases are very much more fatal than the head and neck group, partly because of their anatomical location, partly because of their inaccessibility for early diagnosis and treatment. Thoracic cases very rarely recover. Three such cases treated with large doses of iodide of potash failed to show any improvement. The author discusses in detail the various pathological changes which occur, and the sequences of the advance of the disease in these regions.

On the whole, the work is so extensive and so recent that no other references to the subject need be given. The author's mass of cases and wide research in the literature of course give his opinions authority, and in future it would certainly be well to give the silver nitrate in-

jections a trial. There is only one point about which we are not quite ready to yield to Shiota's opinion, and that is the abandonment of potassium iodide internally. The cases in which he tried it were relatively few, and not convincing. It has seemed of service to so many others that it should not be given up on the evidence of nine cases, three of which were of the admittedly hopeless thoracic form, with extensive pulmonary involvement.

A BUREAU OF HEALTH.

By J. G. B. BULLOCH, M. D., Washington, D. C.

We need a Bureau of Health, but the great drawback to the accomplishment of the object desired seems to lie in a lack of interest of the people and the physicians. The public seems to be much more interested in commercial enterprises and amusements than in the preservation of health. Many physicians seem to either care nothing about hygiene, or else apparently think that if too much care is taken to keep people healthy, their occupation will be gone, and I fear that at least a minority are so callous to the interest of humanity that they would rather not see such diseases as gonorrhœa and syphilis stamped out, as a few get quite a remuneration from the treatment of these diseases.

My observation is that most of our physicians do not pay any attention to sanitation. I consider that no physician should go to cases of scarlet fever and other exanthemata unless he wears a rubber coat or linen duster, and then not attend another case of different character immediately after, and also that he should thoroughly sterilize his face, hands and hair. In fact, it is to be hoped that ere long no physician will be allowed to attend the eruptive diseases and then go to other patients, but that one set of physicians will attend all acute diseases of the skin and throat, such as scarlet fever and diphtheria, and no other class of cases, for unquestionably the medical man does carry infection from house to house. (See Dr. Oliver Wendell Holmes' observations on "Puerperal Fever.")

As to those physicians whose practice is confined to a large extent to the commission of abortions, it is to be hoped that the law will take hold of and deal severely with these malefactors.

In this city, we have had an epidemic of measles. Why should this disease be allowed to run rampant through a community when by care it could be eliminated? Why should poor little ones grow up with weak eyes, weak lungs, and other weak members, due to the infection of measles, scarlet fever, diphtheria and ophthalmia neonatorum, when such diseases, by the use of proper sanitary precautions, can be entirely stamped out of existence?

In the case of measles, the houses are not even disinfected, but only aired. It is a well-known fact that if a field is planted year after year with the same grain the soil becomes exhausted. Is it not so with the human system? Can we hope to eradicate tuberculosis when the system of the individual has been worn out from infancy with various preventable diseases, and thus, not able to withstand the inroads of the tubercle bacilli, succumbs? Unless we have a strong, vigorous race, able to cope with disease, there is no use to try to stamp out consumption.

We should require absolute cleanliness in everything, house the poor and oppressed, teach them how to live in a sanitary manner, and then we may succeed; otherwise, if we let the system become undermined by disease, there will be no use to try to put a stop upon the ravages of the "white plague."

Surely the only way to secure the desired end is to have a Department of Health, and in each county a health officer and a sanitary corps, whose duties should be to give lectures upon health, disseminate literature upon hygienic topics, and last of all, when necessary, to enforce the rules of the Department of Health. Unless we have this matter taken up by the government it will be useless to hold sanitary congresses, useless to try to stamp out disease, and useless to expect to have a strong, conquering race who will forge ahead and enlighten the world intellectually and morally and to have peace and prosperity.

We desire to call attention to the pernicious habit in vogue at public drinking places of washing the glasses in water previously used, thus running the risk of becoming contaminated by various diseases. All public places should be inspected and the proprietors required to thoroughly wash and sterilize all glasses, knives, forks, plates, and all utensils used by their patrons. These things should be thoroughly

washed in running water, and not in stagnant water, and should be placed frequently in hot water with some good antiseptic in it, and especially should dentists, barbers and others sterilize their instruments.

There are many suggestions in regard to the proper sanitary conditions in which a city should be kept. In all cities the sweeping of pavements should be done only at night, and not when people are on the move. There is danger when vegetables and meats are exposed to the dust of a city; hence, all of these should not only be kept free from contaminating influences of city filth, but even in their transportation should be well covered. There are many things to which attention could be called, but we desire now to make a plea for humanity as regards the long hours of labor.

If we desire a healthy, intelligent race, one on whom we can depend in time of need, and one who will have strong, robust children, it will be necessary to shorten the hours of toil, for it is absolutely necessary that mankind have long periods for rest, recreation, amusement and outdoor exercise, if we desire to raise a vigorous progeny; unless we allow these privileges to man he becomes weak and infirm and ceases to produce an intelligent and healthy issue. What would one think if fine machinery were put in an old hulk of a vessel? Could we expect anything but disaster to occur? Then, how can we expect when we run the human system down by excessive work, that the poor physical body and nervous system wrought to a high state of tension can bear up under the strain?

We see that it is very evident that unless we give our young men a better chance to obtain physical exercise and give them the benefit of air and sunshine, there is great danger of their being unable to withstand the fatigue of a military life when called into the field of action, as has been demonstrated several times when large bodies of them have become sick and unfitted for duty.

Let us then brush aside selfishness and work for the advancement of humanity.

2122 *P Street, N. W.*

University College of Medicine, Richmond.

Plans and estimates for rebuilding the college on its former site are being solicited.

INFANTILE HYPERTROPHIC PYLORIC STENOSIS.*

By McGUIRE NEWTON, M. D., Richmond, Va.
Professor of Pediatrics in the University College of Medicine, etc.

Since the awakening of the members of the medical profession to the fact that the results to be obtained warrant as much care in the diagnosis of disease in children as in adults, there have appeared many reports of diseased conditions in early life which were hitherto unknown, or considered very rare. Such is the history of hypertrophic pyloric stenosis of infants. The first report of a case was made in the latter part of the eighteenth century, remained as the only description of the condition for nearly 100 years; while recently reports of its occurrence have been so numerous that it can no longer be considered as a rarity.

Of the cases so far reported, a large majority have terminated fatally. Where autopsy has been possible, examination has invariably disclosed the pylorus to be much enlarged and resembling cartilage, owing to the marked thickening of its wall, which encroaches on the lumen, and as effectively closes it as if atresia existed. This thickening is the result of hypertrophy of its circular muscle fibers, there being little if any increase in its other component tissues, and there is no evidence of inflammatory or other pathological change.

The congenital origin of this hypertrophy is not an established fact, and as no record has ever been made of its existence in fetal life, or in the new born, and as its first symptoms do not usually appear before the end of the second week, I am inclined to agree with those who contend that this is not a congenital condition, and that, therefore, it should be known as infantile, rather than congenital, hypertrophic pyloric stenosis.

As to the cause, nothing is definitely known, but there are such a variety of theories that the most fastidious can be satisfied. In light of the fact that in a number of cases which have been reported, as well as in my own, excessive acidity of the vomit was sufficiently well marked to attract attention, I feel disposed to believe that the primary cause is some disturbance in the secretory function of the stomach resulting in hyperacidity of its secretion, which, by its presence, irritates the pylorus, stimulating it to spasmodic contraction.

*Read by title at the meeting of the Medical Society of Virginia, held at Roanoke, Va., October 5-8, 1909.

This may be intermittent, and finally give way, or it may be continuous, resulting in hypertrophy of its circular muscle fibers. In the one case there is functional spasm; in the other organic stenosis. I, therefore, believe that so-called simple pyloric spasm and hypertrophic pyloric stenosis represent the extreme forms of the same condition.

However different the views concerning its causation may be, the clinical history is so nearly alike in all cases that its description admits of but little variation. Vomiting is the most important symptom; it is always the first to be observed, and it persists until the obstruction is relieved. It usually begins in the latter part of the second or during the third week after birth of an otherwise healthy infant; occasionally it has begun as early as the first week, and likewise it has been delayed as long as the sixth week. At first it occurs only once or twice during the day, but the frequency soon increases until it follows nearly every feeding; those meals which are retained do not pass into the intestine, but remain to be vomited with subsequent feedings. Its characteristics are that it is forcible or projectile, often coming through the nose; it is unattended by nausea, coated tongue, or other evidences of disturbed digestion; immediate relief follows; the appetite is unaffected, and it is not influenced by alteration of diet, or the administration of the usual remedies; the vomit contains no bile, and frequently is excessively acid in reaction.

The other symptoms are dependent on the vomiting, and are: constipation, the stools being small, greenish yellow in color, containing no fecal matter, but consisting of the intestinal secretions; diminished amount of urine; and wasting, the patient losing flesh rapidly with the early development of marasmus.

Physical signs of great importance are disclosed by inspection and palpation of the abdomen. Owing to the empty condition of the bowels, the lower portion of the abdomen will be observed to be flattened or sunken, while its upper portion is prominent on account of the gastric distention. Stroking or irritating the skin will stimulate peristaltic movements of the stomach, which are plainly visible and often violent, the appearance being that of a small ball, rolling obliquely from left to right beneath the thin abdominal wall.

On firm palpation, in cases which have been going on for a week or more, the pylorus can often be felt, giving to the finger the sensation of an enlarged lymph node. Where these signs and symptoms are presented, the diagnosis of pyloric obstruction is easy, though it is often difficult to determine whether there is simple spasm with temporary stenosis, or hypertrophy with permanent stenosis.

Favoring the diagnosis of simple spasm would be periods of intermission in the vomiting, which are accompanied or followed by increase in frequency of the stools, which often contain curds; slight, if any, loss in weight; disappearance for a time of the visible peristaltic movements; and inability to palpate the pylorus.

When the diagnosis of hypertrophy is positive, there is but one treatment, which is surgical, and that should be resorted to as soon as possible, for with every day's delay the chance of recovery is materially lessened. Of the operations that have been tried—viz., gastro-enterostomy, anterior and posterior; divulsion; pyloroplasty; and pylorectomy, the posterior gastro-enterostomy seems to be the most favored, though each of the others has its champions.

When hypertrophy has occurred, the time for medication has passed, but it is possible that our drugs may prove effectual in preventing this condition, if we make a practice of examining the stomach contents in cases of persistent vomiting in young infants, and resort to remedies to correct hyperacidity where it is found to exist.

Case. H. G. C., Jr., white, male, four weeks old, was seen by me on June 11, 1909, in consultation with Drs. J. D. Osborne and H. G. Leigh, of Petersburg, Va. Family history negative.

From a study of the chart, which had been kept by an exceptionally intelligent and capable trained nurse, who was with the mother during confinement, I learned that the delivery was normal; that artificial feeding with modified milk was begun on the third day, and that the infant did uncommonly well for the first seventeen days. During this time there was no spitting, vomiting, colic, nor other evidence of digestive disturbance. There were two or three stools every day, which were normal, considering the character of his food. With the exception of an occasional soap suppository, no treatment had been indicated or used.

On the eighteenth day he vomited twice; with the record of this is the note "acid in reaction." After this the vomiting persisted and increased in frequency, and on the twenty-second day, or the fifth day of the vomiting, the nurse wrote "Vomited five times; there is no rule of retention, sometimes the food is vomited at once; sometimes retained until after the next feeding." From this time the frequency varied from five to nine times a day, with the exception of one day, when the vomiting occurred only three times.

There had been a steady loss in weight amounting to twenty ounces in fourteen days. Very little urine had been voided. The number of stools had been reduced, and were usually the result of enemata, and with a single exception, had been recorded as "Small, greenish yellow, with mucus." This exception was on the day following that on which vomiting occurred only three times, when a stool was described as "containing very little soft curd."

The usual remedies and variations in diet had been used without effect. On observing the patient for several minutes as he slept on the nurse's lap, there was nothing to arrest attention, other than the evident emaciation. Inspection of the abdomen showed it to be sunken, or retracted, in its lower part, while in the region of the stomach there was an apparent fullness or distention. Efforts at palpating the pylorus were unsuccessful, but the act of palpation stimulated violent peristaltic movements of the stomach, which were plainly visible.

The diagnosis of pyloric obstruction was made, but in the absence of the palpable pylorus we were unable to determine whether this was due to simple spasm or hypertrophic stenosis. We decided to resort to rectal feeding, using enemata of completely peptonized skimmed milk, and to allow nothing in the stomach other than normal saline solution for three days.

When I saw him three days later I learned that he had vomited very little of the normal saline, which, from his appearance and increase in weight (ten ounces in three days) had evidently been absorbed from the stomach and carried directly into the tissues with the production of general edema. The amount of urine had been further diminished for one day, and then considerably increased. The changes in the stools had been such as would be expected with rectal feeding. Through a catheter, introduced into the stomach a considerable quantity of fluid was withdrawn; as some of this was wasted, it could not be accurately measured, but it was more than had been given for several hours. The violent peristaltic movements were still apparent. While not positive, I thought that I could palpate the pylorus, and consequently expressed the opinion that the obstruction was the result of hypertrophic stenosis, and advised operation, which was agreed to.

The following day (June 15th) Dr. Stuart McGuire, of Richmond, Va., with the assistance of Dr. Otto Ramsay, of New Haven, Conn. performed the operation of posterior gastro-enterostomy, during which examination of the pylorus verified the diagnosis of hypertrophy.

The patient reacted well with but little shock. Twelve hours later he vomited a greenish fluid; this was repeated in about six hours. Nothing was allowed by mouth for thirty hours, when a dose of calomel was given; this was followed by an ounce of water. After repeating the water, at intervals of two hours, for four doses, feeding with pre-digested whey and water equal parts, was begun; the quantity and strength of food was gradually increased. From this time until he left the hospital, fourteen days after the operation, his chart shows that he vomited but twice. During the summer he had to contend with two attacks of intestinal disturbance due to changes in his food. From both of these he made a good recovery and his father reports that at present he is thriving.

ENLARGED PROSTATE—TWO SPECEIMENS REMOVED SUPRAPUBICALLY.*

By G. SHEARMAN PETERKIN, M. D., Seattle, Wash.

The excuse for presenting two specimens of enlarged prostates,removed this week, is a request from the program committee for pathologic specimens. There are points of interest other than difference in size, which, if noted, will perhaps be of interest to you—especially is this true of the smaller specimen. Clinically, there is little of interest in either case.

Specimen 1. Patient, Mr. G., aet. 87; referred by Dr. F. R. Underwood; prostate,

*Read efore the King County Medical Society, Nov. 1, 1909, Seattle, Wash.

weight, 7 drachms, as can be seen, was removed in its entirety. This calculus, weight 180 grains, sectioned so as to show its original formation (uric acid), was also present. Operation consumed ten minutes; recovery was without nausea or apparent shock; patient was up on the third day; recovery uneventful.

Specimen 2. Patient, Mr. L., aet. 88; referred by Dr. D. A. Mitchell; prostate, weight, 72 drachms; because of size and character of development (glandular) was removed by morselization. Operation consumed fifteen minutes; no nausea nor shock; patient was out of bed on the fourth day; recovery and progress uneventful.

Ages and duration of operations are given to demonstrate the fact that suprapubic prostatectomy can be performed with little shock, because of time consumed and that age is no contraindication.

In prostatectomy, suprapubic or perineal, a term continually used is "prostatic capsule." This is not a mere division for convenience of anatomical classification. but has its practical surgical significance. In using this term, I mean the true prostatic capsule,—splendidly illustrated in specimen 1. This prostate enucleated in its entirety, shows the urethra passing through the center and the true capsule completely surrounding the prostate to which it is so intimately adherent that it is, as it should be, a part of the gland and cannot be removed from same. It is between this capsule and false capsule, the one forming the recto-vesical fascia—the one left after removal of the prostate—that the prostatic plexus of veins lies, and these veins are intimately connected with the latter or false capsule.

Point 1. The practical surgical significance of this knowledge regarding both capsules is that, after nicking the mucous membrane, let the tactile surface or ball of enucleating finger following the true capsule,—the nail being toward it; not toward the false capsule and plexus of veins, and then there will be less hemorrhage; less shock and prostatectomy becomes a not dangerous operation.

Point 2. The destruction of the sexual functions. Is there any other law of nature and its workings,—physiologic or otherwise, and a primary law at that—of which we are so blissfully ignorant as we are of the law of sex? What has been the bugaboo that has prevented the advance—and it does to-day—of prostatic surgery, end especially prostatectomy, and makes many a man with an enlarged prostate suffer continual pain, be a burden to himself and others? Is it the fear of operation and loss of his sexual power; or that people will think he has lost this power? One man in this country, Dr. Hugh Young, has made an international reputation for perineal prostatectomy; made it the operation of election. Is it an operation of election, because this operation is less dangerous and difficult to perform, or is it that the ejaculatory ducts are preserved; therefore, the sexual power? It is, in my opinion. this latter belief that the sexual power is retained; and this fact, more than any other, has given perineal prostatectomy its present status. But there is an English surgeon, with international reputation, who performs only suprapubic prostatectomy and makes a report of 600 cases which ends with these words, "Further, there is no diminution in the sexual power after operation."

What is the true inwardness of all this? Is the sexual power retained or has our knowledge of the part played by the testes in the sexual act been at fault? Let us consider some practical facts of general knowledge:—First and foremost, the sexual power is much more psychical than physical. Secondly, daily, we see men who have double epididymitis, whom we know are sterile. Are they impotent? No. Seldom. By disease, the canal of the vas is closed mechanically and the testicular secretion is cut off. Mechanically, by prostatectomy, the testicular secretion may be cut off by closing the ejaculatory ducts. Why should a clean mechanical obstruction cause impotency, as against obstruction produced by disease? In my opinion, it will not. Again, does total ablation of both testes, after adult life is attained, render a man impotent? That it does not is well attested by the fact that, in China, eunuchs are made by ablating not only the testes, but the penis; for practical experience teaches that double orchidectomy alone does not prevent the sexual act.

Regarding the preservation of the sexual power, by perineal section, through retaining the ejaculatory ducts intact, let us picture a perfect operation, say, of Young's, and that the ejaculatory ducts are left intact. We know

that after any prostatectomy, the false capsule collapses or contracts. We know that the ejaculatory ducts are three-fourths of an inch long, running for that distance through the prostatic gland. When this contraction of the capsule takes place. is there any means of preventing the ejaculatory ducts from becoming so tortuous as to close the canal or the fibrous contraction that takes place, from mechanically obliterating their lumen? Who can say it does not? Freyer does not protect them; Goodfellow, who does perineal prostatectomy, does not protect them, and yet both claim that the sexual power is retained; but if the lumen of the ejaculatory ducts is obstructed by either suprapubic or perineal prostatectomy, does obstruction of ducts cause impotency? We know it does not.

Taking into consideration the facts mentioned, is it the psychical belief that he is not impotent, or the fact that the ejaculatory ducts remain patent and cause a patient whose prostate is removed to continue to be potent? Personally, I do not think the patency or lack of patency of ejaculatory ducts has anything to do with it. The retention of sexual power is due to a psychical suggestion and the man possessed of the belief in himself, in his sexual power, and that it will be retained, will not be impotent, and he who does believe he will lose this power, will.

This being a fact, the point I want to bring out is that it is our duty to teach that prostatectomy will not unsex, and it is our duty for the sake of the patient, so that when this operation is necessitated (suprapubic or perineal), he will retain his self respect and belief in himself; and, moreover, this belief being fostered, he will retain the power of iniation and be of more value in the world's activities.

Another word, though, about retaining the sexual power. We have heard the leaders of both sides state that sexual power is retained (we have our own experience to judge from); but how many of them can report any men virile, in the sense that they procreate? I have not heard of any case, have you? And what difference does it make, from a point of practical social economics, if these men, though potent, are sterile? None, for a man old enough to have his prostate removed, is too old to produce children that will be a benefit to society.

The object of this paper is not to discuss surgical technic; the value of suprapubic or perineal prostatectomy or vice versa; but to bring out two points:

1. The surgical value of the true capsule.
2. The value of suggestion in causing man to remain potent.

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HYGIENE AND PROPHYLAXIS OF TYPHOID FEVER,*

By RICHARD MASON, M. D., The Plains, Va.

This subject has been so thoroughly studied in recent years by the various health boards of our large cities and towns that I shall not attempt to discuss it from the city standpoint, but rather content myself with making a few suggestions on the prevention of typhoid fever, as the general practitioner meets with it in the country and in small villages.

When this subject was assigned to me at our last meeting a member sitting next to me, remarked, "You can almost sum the whole subject up in two words: 'Fight flies.'" And from the country physician's standpoint there is a good deal of truth in this.

The specific micro-organism causing typhoid is contained in the discharges from the bowels of typhoid patients; and though in cities and towns the disease is probably disseminated most frequently through the water supply, I believe that privies carelessly kept and swarming with flies are largely responsible for the spreading of typhoid fever in the country and in villages.

Frequently we encounter mild or "walking cases" of typhoid and some of these patients continue to go about for days before consulting a physician, contaminating every privy that happens to be convenient. And if the privies are carelessly kept, flies swarm into them, light and feed on the dejecta, then fly straight away to a neighboring dining room, kitchen or pantry, carrying the germs with them to contaminate whatever food they may happen to light upon.

Now in the country and in many villages the old-fashioned privies, as unhygienic as they must be, are still a necessity. But much may be done toward teaching the laity how to take care of them so that they may be rendered

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harmless and not become sources for the dissemination of typhoid fever and other transmissible diseases. In the first place the privy should be located as far from the well or spring as the premises will permit and always in a position so that the natural drainage will go in an opposite direction from the water supply. The privy should be built over a hole or trench 2 1-2 to 3 feet deep, into which the dejecta is dropped and there should be kept on hand a box containing half a bushel or more of slaked lime, a small quantity of which should be sprinkled on each evacuation immediately it is dropped or emptied into the trench. This not only acts as a deodorant and disinfectant but prevents the flies from alighting on the dejecta and thus becoming carriers of the typhoid bacillus. Then, when the trench becomes filled to half its depth it may be filled in with fresh earth and the privy moved a few feet in one direction or another and placed over a newly dug trench.

These precautions should be taken at all times, but when you have an actual outbreak of typhoid each evacuation from a typhoid patient should be disinfected before being emptied into the trench as follows:—Mix with each evacuation double its volume of a one per cent. solution of chloride of lime, or double its volume of a 5 per cent. solution of carbolic acid; cover the vessel and allow it to stand from one to two hours before it is emptied. This applies to the urine and vomited matter, as well as to the intestinal evacuations. All body and bed clothing of the patient that has become soiled by intestinal discharges should be removed at once and placed in a covered vessel containing a cold 3 per cent. solution of carbolic acid. They should remain in this solution about 2 hours, when they may be taken out and laundered in the usual way.

After handling a typhoid patient both doctor and nurse should carefully rinse their hands in a 1 to 1000 solution of bichloride of mercury.

Much may be done, too, by screening the dining and living rooms of the house against flies In recent times much interest has centered around the efforts at protective inoculation against typhoid infection, though as yet this method of prevention is still in the experimental stage.

Don't fail to vaccinate the unprotected.

TECHNIC AND TREATMENT OF CERTAIN DERMAL DISEASES AND DEFORMITIES WITH CARBON DIOXIDE.

By C. AUGUSTUS SIMPSON, M. D., Washington, D. C.
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The medical profession with undue conservatism is sometimes prone to cast aside as worthless a therapeutic agent which, with more careful observation, might be of real consequence; and my object is to present the subject of carbon dioxide as an anesthetic and cauterant, and let those interested judge for themselves as to its value.

Two prime factors why this remedy should be used more is cheapness and obtainability, while experiments by such men as Pusey, first, then by Whitehouse, Gottheil and others, show it not to be one of those so-called novelties from which we should shield our patients; again any physician can master the technique which as a rule ties his hands in such notoriously expensive and delicate apparatus as X-ray, Finsen light, etc. With carbon dioxide we have at our disposal a therapeutic procedure which is cheap, easy to obtain, not requiring a great amount of skill, which places the general practitioner in position to treat such dermatoses as lupus, erythematosus, nevi of various kinds, port wine stains and other deformities and diseases with which in the past he was unable to cope. These cases before were either given a hopeless prognosis; else journeyed to the dermatologist where no doubt in lots of cases the cure was as noticeable, if not more so, than the disease.

Congelation we all know is a therapeutic procedure quite old, and in 1899 Dr. White published the report of his work with liquid air when he used it as an anesthetic and stimulative cauterant. It is a colorless, odorless, effervescing fluid, of about the same weight as a given volume of water with temperature of 250 degrees below zero Fahrenheit.

Unfortunately liquid air is not a commercial product, and unless it becomes more generally used for scientific purposes than it is at the present day, it can never be extensively used by the profession—requiring expensive Dewar bulbs which only keep the product forty-eight

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hours or so. This makes this article both rare, expensive and not within the reach of the average doctor.

Ethyl-cloride and rhigoline—two preparations one time advocated by many—failed to find favor with most of us, and besides were not always available. Ethylate of soda and potash advocated by Richardson and a few others is casually mentioned by Stelwagon in company with other caustics as being inferior to electrolysis, and even in nitric acid in some cases.

September, 1907, Dr. Pusey, of Chicago, first demonstrated carbon dioxide before the Dermatological Society in New York. Since then various dermatologists have developed technic other than his. Gottheil drew it into a piece of chamois skin or towel as a stick, then shaved it with a knife into the required shape. Hubbard used a mould; Whitehouse drew it as a snow; afterwards he moulded it under pressure.

Carbon dioxide is made by the action of hydrochloric acid on calcium carbonate and purified by passing through various solutions. Its temperature when drawn varies from 90 to 130 degrees when lightly dipped into ether just before application. Commercially it can be procured from soda fountain or druggist supply houses who handle it in long tested steel cylinders as a colorless gas about 1 1-2 times as heavy as air and under pressure of something like a thousand pounds to the square inch. A tube costs only $3.00—sufficient for at least sixty drawings which for cheapness and obtainibility places it within reach of all.

To obtain the ice, I am in the habit of so folding a piece of blotting paper over the vent found in the upper end of the tube as to form a hollow cone about three inches long and about one inch in diameter. Around this I tightly wrap a towel and over all snugly apply a muslin bandage until the cone is quite stationary, and wrappings dense enough to retard the escape of gas.

The tube is now tilted to an angle of forty-five which prevents freezing of valve. With a small wrench, the gas is allowed to flow slowly into the cone; then turned off. This freezes the meshes of the towel and blotting paper, forming an icy lining to them. The gas is then turned on full for five or eight seconds, which fills the cone. This is repeated several times so as to pack the ice as hard as possible, as the density of the snow will lower its temperature. After testing the cone to see that it is full, you now take off the wrapping, which gives you a chalk-like mass the size of your mould, and ranging in temperature from 90 degrees at the distal end to 130 below zero F. at the proximal or vent end. With a knife you can make the mass fit any lesion you care to treat —from small nevi to port wine stain an inch in diameter. The technique of the application, while requiring some experience, can be easily acquired.

Four elements govern the effect produced. First: a hard, dense piece of snow cut suitable to cover your lesion. Second: accuracy of contact. Third: amount of pressure exerted Fourth: duration of exposure.

Some dermatoses as pale port wine stains or lupus erythematosus require light pressure of from twenty to thirty-five seconds, while a pigmented hairy nevus or angioma require more pressure up to forty second. Epithelioma such as occurs on the face requires longer contact, particularly at the hard rolled edges—up to sixty seconds or longer. Of course pressure is to be governed by location of lesion, as one over a bony prominence as the frontal, would require a shorter time than one over the fleshy part of the cheek. If the lesion is near a mucous membrane that should be protected by a piece of gauze. The application is not painful owing to the anesthesia, and the thawing out causing slight pain can be relieved by sponging the parts with cold water.

Having obtained our ice and mastered the simple technic of its application, the next point is to proceed with a description of lesions for which it is and is not adapted. It is obvious that the line of argument most likely to influence those of you to think you have no use for the method will be that tending to show the inadequacy and weakness of the older and well established methods.

First: *Lupus erythematosus.* This disease thought by many physicians to be a useful field for X-ray, stands first. X-ray is worse than useless in any form of this affliction. Personally, I never saw a case cured with the ray that did not show deformities of telangiectasia and sclerotization of tissues that were quite as disfiguring as the disease. At the New York Skin and Cancer Hospital, where a static ma-

chine is handy, the ray is never used. I don't know a single competent dermatologist that recommends exposing his patients of lupus erthematosus to the X-ray tube, and yet I know of several cases suffering from severe burns in this city from its use. In the chronic stationary cases nothing has been found to equal carbon dioxide applications. Not only does it cure this disease, but the resulting scar for smoothness and inconspicuousness leaves nothing to be desired. Certainly nothing like it can be found in the results of radio-therapy, cautery, or chemical caustics.

Second: *Pigmented hairy nevi.* These deformities I have removed with CO_2, and in the place of a black disfiguring hairy spot we can obtain a delicate film of connective tissue which, in time, fades to the color of the surrounding skin, leaving hardly any trace. At the Skin and Cancer Hospital snow is always used in these cases.

Third: *Flat vascular nevi or port wine stains* are easily removed with short applications as thirty seconds or so—most cases leaving no scar at all. These marks were formerly removed with the electric needle, which is very hard on the operator's eyes, being tedious, sometimes scarring and often uncertain.

Fourth: *Chloasma.* I here refer to the idiopathic form, as stains from applications of strong sinapisms and blisters as cantharidal plasters yield nicely to short applications as twenty seconds or so.

Fifth: *Permanent pigmentation,* following mechanical introduction of pigment as tattoo marking. Here again is a fruitful field for the snow, the pigment coming away with the resulting blister. In Gottheil's clinic at the New York Post Graduate Hospital I saw an excellent result following application of snow in a gun-powder stain case.

Sixth: *Lupus vulgaris,* I treated with exposures to Finsen light at Skin and Cancer Hospital, as no other procedure gives such an excellent cosmetic effect, besides having the benefit of the bactericidal action of the actinic ray which destroyed the bacilli. But in absence of this expensive apparatus I would not hesitate to apply the snow.

This list by no means exhausts the field of usefulness of this excellent canterant. Angiomata, warts, keloid, tuberculosis cutis verrucosa and epithelioma of the superficial slow growing type, I have seen destroyed by carbon dioxide —always leaving the same delicate, pliable, smooth film of connective tissue which for cosmetic effect has no equal among cauterants.

In closing this article I cannot resist the temptation "to take a fling" at the usual treatments of superficial epithelioma. The much flaunted X-ray is brought forward as a mysterious agent with its wonderful effects. Here is an apparatus which gives no reliable means to determine the dose; no way save by actual experiments, to know the individual susceptibility of our patient's skin, and lastly whose mode of action we poorly understand and whether that action will end in a superficial dermatitis or go on to intractible ulceration and, may-be, later undergo malignant degeneration. I may ask which one of you would prescribe a drug of which you knew so little. I think this argument quite sufficient to show the physician that with this apparatus he can do his patients a lasting injury—the echo of which may be heard in a damage suit. The courts have been very lenient in these cases, but there is evidence of a change of attitude which in the future, I am afraid will prove costly for the medical man. Not only does he often fail to cure the epithelioma with his accompanying dermatitis, but he often stimulates its growth to greater activity, requiring a major operation, and then too late he realizes his mistake; for with his mysterious rays he has so devitalized the surrounding and subcutaneous tissues, that the surgeon called in finds it impossible to secure healthy granulations and skin flaps which, as you all know, are most necessary in plastic surgery. Not only have I seen this once but many times.

Radium gelatin, another mythical so-called sure cure for epithelioma, I have seen fail miserably in bath sarcoma and epithelioma. I can almost hear the death knell of this expensive article, as was sounded over the last hopes of the tripsin treatment in October (*London Lancet*) by Dr. William S. Bainbridge.

There is only one form of epithelioma for which I could conscientiously recommend CO_2, and that is the superficial small variety such as may occur on forehead, nose, and cheek, requiring fifty to sixty seconds application especially at its outer everted edges. Under no consideration would I use it on one of these lesions situated on soft parts or mucous mem-

brane, as the lip or tongue, nor if there is the slightest evidence of lymph gland metastasis. Repeating my statement that in certain forms of epithielioma, lupus vulgaris, tuberculosis cutis verricosa and angiomata and in all cases of nevi warts, keloids, tattoo marks and lupus erythematosus there is no method at present known to dermatologists that compares with the effect produced by carbon dioxide—especially from a cosmetic point of view.

On reviewing this article I have taken the liberty to mention several of my instructors as it was through their kindness that I was enabled to become acquainted with this subject. For clinical opportunities I am especially grateful to Drs. Fox, Whitehouse, Brown and Gottheil at the New York Skin and Cancer Hospital and New York Post-Graduate Hospital.

1. Gottheil. X-ray Uses, Dangers and Abuses.
2. Stelwagon's Dermatology.
3. London Lancet, October, 1909.
4. Whitehouse. Liquid Air in Dermatology.
5. Pusey. Use of Carbon Dioxide Snow in Treatment of Nevi.
6. Gottheil. Solid Carbon Dioxide in Anesthetic and C terant.
7. Jackson. Freezing as a Therapeutic Measure, Liquid Air and Carbon Dioxide Snow.
8. Trimble. Nevus Pilosus P men osus and Other Skin Lesions Treated with Liquid Air.
9. Zeisler. Observations on Use of Carbon Dioxide.
10. Juliusberg. Gefrierbehandlung bei Hautkrankheiten. Berlin Klin Woch. 1909.
11. Walker's Dermatology.

The Burlington.

PATHOLOGY AND TREATMENT OF TYPHOID FEVER.

By Z. V. SHERRILL, M. D., Marion, Va.

Pathology—I wish to direct attention more especially to the changes in the intestinal tract, due to typhoid fever, beginning with the lips, mouth, tongue, pharynx and parotid glands. During mild attacks no, or but slight, changes occur, but in severe attacks they are likely to acquire a peculiar character and therefore constitute an important clinical picture.

At an early stage the mucous membrane of these parts exhibit a tendency to dryness. At the same time the tongue is more or less coated and swollen and often has deep depressions of the teeth.

At the height of the disease the upper lip is often retracted and the upper teeth exposed. The tongue and lips become covered with a dirty-brown viscid deposit which rapidly dries.

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The dry mucous membrane of the lips becomes fissured and the gums are spongy and bleed readily, and children often pick at the sore lips and edematous and sometimes ulcerative processes develop with much swelling of the mouth and lips.

The tongue at first is frequently covered only in the middle with a more or less heavy whitish-yellow deposit, while its swollen margins are much reddened.

During the first week, the tongue is usually moist by day, but becomes dry at night or toward evening. During the second week, if the case is a severe one, the tongue can be kept moist only with great care. It is often tremulous and is extended with difficulty, and unless the patient is well cared for, it becomes dry, brown, fissured and sometimes bleeds. The coating of the tongue disappears sometimes during the second or third week and leaves it smooth, red and pointed. Several factors contribute to make the tongue dry—namely, temperature, lessening of the salivary flow, keeping the mouth open and the indifference of the patient. The excessively dry tongue of the typhoid patient nearly always exhibits more or less derangement of consciousness.

The pharynx is in large measure similarly affected as the tongue, being dry but not coated as a rule, but may become coated with the same desicated coating which sometimes is a serious obstacle to deglutition. Deposits of thrush sometimes occur in the mouth and upon the tonsil. This has never occurred in a case of mine to my knowledge.

Infection is sometimes carried from the mouth through Steno's duct to the parotid gland. This occurs less frequently than formerly, due to the greater care given to the mouth.

Parotitis is usually unilateral, and usually develops at the height of the disease, but may occur during convalescence. I have seen one case. It occurs in very ill or very much reduced patients. This affection is usually exceedingly painful, but sometimes subsides without suppuration. The usual course is, however, to suppurate. Among the serious consequences of this complication are thrombosis of the jugular vein and cerebral sinuses and acute edema of the brain.

Stomach and Esophagus.—It is only in extremely rare cases that the stomach and

esophagus exhibit alterations. The stomach and upper part of the small intestine, including the large intestine and rectum, occupy a subordinate place in relation to the remainder of the small intestine in typhoid fever. An unusual redness of the gastric mucous membrane occurs especially in the vicinity of the pylorus, and at times there are superficial erosions. Occasionally ulceration of the esophagus and stomach occur. Swelling and redness occur occasionally in the duodenum, but less frequently than in the stomach.

Of enormous importance and dominating the entire picture of the anatomy of typhoid fever are the "lesions present in the middle and lower portions of the intestines from the lower third of the jejumum downward." (Osler.)

Before entering upon a detailed description of these it is best perhaps to make some general statements as to the anatomic and topographic conditions.

The dead bodies of typhoid cases exhibit more or less meteorism; this is marked and uniform when the patient has died from peritonitis. If this is absent the distension occurs in the large intestine, and is less marked in the small; and if the colon is a long one it may cover entirely the small intestine. The lower part of the ileum is normal or even contracted, but dark spots are observed on it where the mesentery is attached; these are denser and are found to correspond with the typhoid lesions.

The following stages are present in the typhoid lesion: First, hyperemia; second, medullary infiltration; third, necrotic destruction; fourth, cicitrization. These stages correspond with the clinical course of the disease.

The intestinal lesion does not extend uniformly, but is distributed over a considerable time and involution occurs the same way. The lower ileum and ileo-cecal valve are first involved.

The first stage, hyperemia, occupies the first week probably; this, however, is not understood in detail, as few cases die during this stage. Osler saw a case of suicide during the first week in which there was marked hypermia of the mucous membrane of the cecum.

At the beginning of the second week or in severe cases at the end of the first, medullary infiltration takes place with a probable lessening of the hyperemia of the mucous membrane.

Generally, Peyer's patches are somewhat in advance of the solitary follicles with regard to the evolution of the process, but sometimes changes occur in both at the same time.

The typhoid lesions are situated opposite the attachment of the mesentery and are sharply circumscribed, disc shaped with fungus shaped formations overhanging the margins. First they are reddened, then acquire a grayish-red, and later, at the time of exfoliation, grayish yellow color.

The surface of the patches extend up into the intestinal canal 3, 5 or 8 mm. above the mucous membrane—sometimes smooth, again granular or nodular.

The depth, consistency, etc., vary greatly in different cases. The medullary swelling is not confined to the patches, but often extends beyond them into the adjacent mucous membrane. Sometimes they coalesce, and thus elongated patches are found running parallel with the bowel. This occurs usually near the ileo-cecal valve, both immediately above and below. Infiltration of the solitary follicles in addition to the swelling, are distributed over a wide area. They project above the mucous membrane the size of a pea or larger and are reddish or grayish-red. They sometimes infiltrate and coalesce also, as do those mentioned above. At the commencement of evolution they exhibit a yellowish, then acquire a pustular appearance.

The medullary swelling in both the agminate and the solitary follices is of brief duration. Often it occurs at the end of the second week. Cases of beginning exfoliation have been recorded as early as the tenth day.

Involution of the medullary swelling occurs in the absorption of the diseased product, or more frequently in the form of necrosis with subsequent exfoliation and the formation of ulcers. Both varieties are observed in the same intestine in the same locality. In fact, nearly all of the processes described can be observed at the same time in the same locality of the bowel.

In the parts involved in necrosis, the first indication consists in sponginess and swelling of the tissue. The patches then acquire a grayish-yellow; then a pale yellow or dirty grayish color; then a dirty brownish-green or a dark-olive green. This latter condition is

due to the absorption of bile from the contents of the intestine. Virchow was of the opinion that the necrosis was a form of caseation much like that observed in tuberculosis. Mallory thinks it due to the occlusion of the veins and capillaries by fibrinous thrombi which owe their origin to degeneration of cells beneath the lining endothelium of the vessels. He describes a similar process occurring in the mesenteric glands of the spleen.

Exfoliation rarely advances alike in Peyer's patches; so that eschars are not generally thrown off in one piece, but little at a time. The greater exfoliation of sloughs takes place, as a rule, in the diseased areas and those having deep infiltration.

The ulcers left vary in depth. Sometimes they scarcely penetrate the mucous mebrane and at times they extend down to the muscular coat or destroy a layer of it, and at other times the entire muscular coat is destroyed and the ulcer extends to the serous layer. Even this is often greatly thinned and nothing but a delicate membrane remains.

The ulcers resulting from the solitary follicles attain a size of a pea or even three-quarters of an inch in diameter.

The longitudinal axis of the ulcer conforms to that of the intestine usually, but annular ulcers sometimes occur. Gradual deepening of the ulcers sometimes take place so that ulcers may occasionally give rise to perforation at a time when completion of the process of cicitrization is expected. This, however, is not the usual cause of perforation, but from the outset the infiltration extends down to and even involves the serosa, and after exfoliation of the slough, such a thin unresisting membrane is left that it is not able to withstand the pressure from the intestinal contents. Therefore, there is a nexcellent anatomic basis for the most frequent occurrence of perforative peritonitis at a time when exfoliation of the sloughs takes place; while the secondary ulceration mentioned above explains, in part, the occurrence of perforation at a much later period of the disease.

Intestinal hemorrhage in typhoid may take place from the large intestinal vessels opened in process of exfoliation or mainly from capillary vessels. It is often difficult to ascertain the origin of even a massive hemorrhage. The hemorrhage from large vessels occurs more especially when the exfoliation takes place en masse. Cicitrization of the typhoid ulcers occupies a long time—longer than the preceding stages. This is governed largely by size and depth. Under the influence of general debility the process of healing may be protracted, even in the presence of less profound ulceration.

After cicatrization has occurred the affected areas are depressed, thinner than normal, smooth and lighter in color; later they become darker and subsequently they become more or less markedly pigmented. On account of these changes previous attacks of typhoid fever can be recognized in dead bodies for months or even years.

As time will not permit discussion of pathological changes as they occur in other parts, I simply mention that changes occur in the liver, biliary passages, spleen, pancreas, heart, vascular system, as also in the urinary and respiratory organs in the nervous system, medulla oblongata, spinal cord, etc.

Treatment.—No method capable of destroying the typhoid bacillus in the human body and preventing its dissemination or lessening the activity of its toxins has yet been discovered. While investigations of serum treatment have been made by Widal and others, yet the typhoid serum treatment has proved to be mythical and deceptive.

The early attempt to cause an increased number of stools by means of purgatives and thus eliminate the virus from the intestinal canal was, and is yet, popular treatment.

The calomel treatment still has ardent advocates among the most distinguished living physicians. The method of employment recommended places the greatest importance upon the earliest possible period of the disease—before the end of the ninth day. (Osler).

Only a few physicians believe that the remedy is useful after the second week. Leibermeister believes that treatment with calomel induces a marked mitigation in the disease. Zeimmssen goes further and says the remedy has a marked influence in diminishing the intensity of the whole infection and especially the local intestinal symptoms.

Osler, Baumler and Weil have been unable to convince themselves of its abortive and abbreviating effect. It does cause an increase in the number of stools and a greenish dis-

coloration of the same, often with a transitory depression of temperature which is probably due to the diarrhea itself and not to a specific action of the drug.

Another method, and one which has been taken up anew, is the endeavor to neutralize the abnormal putrefactive changes in the intestines. In this category formerly belonged the administration of chlorine water, the transitory employment of carbolic acid and the benzoates.

The aim now is to introduce into the intestines bactericidal remedies in amount and form capable of destroying typhoid bacilli, or, at least, crippling their further development and dissemination. Rossbach recommended for this purpose naphthaline, while Bouchard employed a series of remedies in addition—viz., (a) Naphthol, (b) naphthol, iodoform, salol and combinations of several of these remedies, as naphthol with bismuth salicyllate. Bouchard's method requires the administration of 15 grams of magnesia sulphate every third day; also, calomel in small doses for three days and finally daily doses of 4 grams naphthol with 2 of bismuth salicylate.

It is then for the present justifiable to assume a doubtful attitude toward the antiseptic method, and to be skeptical at least for a favorable future for it.

The first principal factors in the treatment of typhoid fever are (1) *appropriate care and regulation of the patient's condition, especially in a dietetic way.* (2) The treatment of *important manifestations of symptom-groups, of complications and dangerous accidents, and, finally, that which is so important, supervision of the convalescent period.*

Nursing.—The typhoid patient should be kept in bed during the entire febrile period and beyond this into convalescence. A safe rule is to keep the patient in bed at least one week and in the recumbent position after the temperature registers normal or less.

The ambulatory cases sometimes, but rarely, pursue a mild course. They are often followed by frequent relapses and prolonged convalescense. Utmost mental and physical repose should be secured, and order and discipline are unconditional requirements. These can best be attained through well trained nurses. The patient should be separated from other occupants of the house and from those employed in the kitchen, especially. The sick room should be as large as possible, quiet and easily ventilated with a temperature of from 12 to 14 degrees C. During favorable seasons the windows should be kept open day and night, and in winter a thorough airing should be practiced several times daily. Osler says: "I have the patients lie for hours in the open air with suitable protection from the rain and sun." Glaring light and a dark room should be avoided.

The Sick Bed.—Make allowance as far as possible for previous habits of the patient, but he should never be too warm, and always clean. The water bed is a dandy for the very ill. The sheets should be changed even when slightly soiled, and their texture should not be coarse and not wrinkled on account of danger of bedsores.

Quietude and *recumbency* should be *insisted upon at the beginning* of the disease, but later frequent change of position is to be encouraged, especially for the prevention of lung hypostasis.

Evacuation of the bowels and bladder should take place *exclusively in the recumbent position, even into the period of convalescence.* When the bed is changed the patient should remain in the recumbent position. Many a case of fatal collapse could have been avoided by the observance of these precautions.

Strict bodily cleanliness is to be enjoined. Neglect in this respect in conjunction with defective conditions of the bed leads to bedsores; and these are not due to the nature of the disease, but to deficiency in nursing. The mouth, lips and teeth of the patient require special consideration. Thorough cleansing after food, frequent moistening the lips and frequent proffering of fluids in small quantity are to be enjoined. A well-nursed patient seldom exhibits the dry tongue and lips.

Diet.—Of recent years there is an increased tendency to a much more liberal feeding than formerly. Alcoholic beverages are yet indispensable in spite of theoretic objections. The stimulating effect of alcohol upon the circulation and respiration is established beyond doubt, and Osler says: "I should not be willing to treat typhoid patients at all in certain stages and conditions without alcoholics." In children, however, they are to be avoided or used temporarily or as a last resort.

I wish to call attention to one other com-

plication—one to be most dreaded. I refer to *intestinal hemorrhage.* Upon the slightest indication of intestinal hemorrhage *absolute rest* in the *dorsal position* is *imperative.* The abdomen should be covered with an ice-bag or coil of ice-cold water. All food should be avoided. At most, bits of ice or ice-cold tea in spoonful doses may be allowed. If the hemorrhage is slight, upon its cessation spoonfuls of cold milk or beef tea may be given every two hours. Control intestinal peristalsis at once by opium in heroic doses by mouth, hypodermically or per rectum. I prefer the hypodermic method. This is especially true if the patient is much restless. The direct hemostatics are not trustworthy and often cause the patient to vomit. The subdermal use of ergotin has been given with good results, as also adrenalin chloride. It is not wise to resort to stimulants when the patient becomes feebler. A moderate amount of collapse is favorable to thrombosis of the bleeding vessels, but when there is considerable cardiac weakness following profuse hemorrhage, and collapse has occurred, then resort to vigorous stimulation. I have observed excellent results from the subcutaneous injections of solution sodium chloride.

Osler recommends large doses of calcium chloride (2 grams every three hours) and also the subcutaneous injection of a 2 per cent. solution gelatine in order to increase the coagulability of the blood, to favor thrombosis. I have used the former.

There are yet several complications that should be considered, such as intestinal perforation, disorders of the nervous system, etc., but other fellows are expected to discuss this subject.

EARLY DIAGNOSIS AND TREATMENT OF PULMONARY TUBERCULOSIS,*

By W. D. TEWKSBURY, M. D., Catawba, Va.
[Resident Physician, Catawba Sanatorium.

I appreciate very much the invitation to read a paper on tuberculosis. I have made this a short general paper and have confined myself principally to early diagnosis of the disease and particularly early diagnosis by the general practitioner, as in the vast majority of cases it is the general practitioner upon whom falls the responsibility of diagnosing the disease and advising the course of treatment to be pursued. I wish also to touch on the treatment of the disease.

*Read before the Roanoke, Va., Academy of Medicine, December 20, 1909.

Every practicing physician should bear in mind the possibility of tuberculosis being present whenever he is consulted by a patient, for, as we all know, it is the most frequent disease with which the human race is afflicted. If a patient has only vague symptoms, such as general lassitude, poor appetite, some digestive disturbance and a little loss of weight and strength, a careful study of the case to eliminate tuberculosis should be the duty of the physician. There is one disease in particular which is frequently followed by tuberculosis—namely, typhoid fever. Moreover, recent investigations seem to show that many cases of so-called typhoid fever in which tuberculosis supervenes, are really cases of tuberculosis originally, and are referred to by several authorities as typho-bacillose. The distinguishing characteristics are absence of the Widal reaction and rose spots and the presence of a more irregular temperature than characterizes typhoid. If many of our typhoid diagnoses were checked more carefully and routine sputum analyses made more cases of tuberculosis would be diagnosed and treated early in the disease. I have seen twelve cases which, in all probability, were originally cases of typho-bacillose.

In making a diagnosis of tuberculosis we have at our command the following methods: A careful study of the clinical picture, a careful physical examination, a careful sputum examination, diagnostic tuberculin tests, and possibly X-ray examinations. The first three—namely, the clinical picture, physical examination and sputum examination—are at the command of every practitioner.

The clinical picture of incipient tuberculosis is of prime importance and is extremely variable. Loss of weight and strength, clearing of throat or slight cough in morning, combined with digestive disturbances and general lassitude, are all very suggestive, and should arouse suspicion. But to my mind the most important feature from the clinical standpoint is a study of the temperature, pulse and respiration. These may all be normal when the patient is at rest, thus putting the physician off his guard: but if the patient be instructed to take a brisk walk, the temperature will be found perceptably elevated and the pulse and respi-

ration abnormally accelerated. In an obscure case, whenever possible, I take a record of the temperature, pulse and respiration, in the afternoon following a brisk walk, and it has often been of material aid in making a diagnosis.

Another very important point concerning the temperature in early cases, especially because it is so frequently overlooked, is the presence of a subnormal morning temperature without any afternoon rise. I have frequently heard physicians say this patient can't have tuberculosis; why, his temperature is never above normal, in fact, it is often subnormal. But this same subnormal temperature seems to be as suggestive and as much a part of the disease as is the hyperexia. Four of the most incipient patients at present in the Catawba Sanatorium have a temperature which never goes above 98.6, but which drops to 97 or below every morning. I consider this a very important diagnostic point and one which is overlooked too frequently.

Now, just a few words as to the physical examination: I will pass over inspection and palpation. As to percussion, I find that finer distinctions can be made by employing light percussion exclusively. I have used light percussion for over two years and have confirmed about one hundred of my physical examinations on advanced cases by post-mortem examinations. I have also had an opportunity to follow several incipient cases—dying suddenly from some complication—to post-mortem, and have found my examinations to have been comparatively accurate. I sincerely believe that light percussion is preferable, both for the results obtained and for the comfort of the patient. I know that a great many skilled physicial diagnosticians, however, percuss the chest heavily, but I have never seen a lesion brought out that could not be brought out more clearly and easily by lighter percussion.

In practicing auscultation I have always found that more can usually be discovered posteriorly than anteriorly, the most frequent area in which early signs can be detected being in the intrascapular region between the apex of lung and the middle of scapula. The patient should be instructed to fold his arms, placing a hand on either shoulder, thus baring a greater area for examination posteriorly. As you all know, a slight harshness or roughening of inspiration with a prolongation of expiration, often with the presence of fine rales at the end of inspiration, are the earliest auscultatory signs. Often a cough followed by a deep breath will bring out these rales.

In addition to the above methods, we now have the various tuberculin tests, and I will refer first to diagnostic injections. The use of injections of tuberculin is fraught with some dangers to the patient, and in my opinion should be used only as a last resort, and then only when the patient can be kept under constant observation. Tuberculin undoubtedly has a tendency to arouse latent tubercular foci and occasionally work permanent injury to the patient, but if used carefully I believe it is more reliable than any of the various local tuberculin reactions. After a patient has received the first diagnostic injection of tuberculin, which should never be more than .1 mgm., a careful record should be kept of the temperature, pulse and respiration taken every three hours. Any subjective symptoms, such as headache, nausea, muscular or joint pains, increased expectoration, etc., should be noted, and in addition a careful physical examination should be made and any increase in physical signs, especially the appearance of moisture, should be noted. This physical examination, for the detection of increased focal signs, following a diagnostic injection of tuberculin, is fully as important as the temperature and subjective symptoms, as almost invariably, if the test is positive, evidence of moisture can be found at the local point of infection in the lung. Yet it is done comparatively seldom. The value of the various local tuberculin reactions is still under discussion, but they are all undoubtedly of much assistance in clinching a diagnosis. I used the ophthalmo-tuberculin test on a series of twenty cases—ten early cases and ten advanced cases. Six of the early cases reacted, or 60 per cent., and only one of the advanced cases reacted. We do not, however, expect to get the reaction in the advanced cases. In one patient the reaction was rather severe, but the eye returned to normal in about ten days. Personally, I prefer using the diagnostic injections before pronouncing a case free from tuberculosis.

As to the diagnostic value of the X-ray in incipient tuberculosis my experience has been very limited. We had an excellent X-ray outfit in

the Tuberculosis Hospital at Washington, and we took a few plates which confirmed the physical examinations, but it takes a great deal of experience to accurately interpret chest plates showing slight infiltrations, and, to give practical results, this should undoubtedly be done by one who makes a specialty of that work alone. I feel certain, however, that in the next few years it will become an important factor in aiding us to make early diagnoses.

After a diagnosis is established, there is only one course to be pursued, if it be possible, and that course is to remove the patient from his home into some sanatorium where he can be taught how to live both for his own benefit and to prevent the infection of others. If the patient is a curable case both these results can be accomplished; if a hopeless case he can at least be prevented from infecting others. It has been found and is admitted by most authorities, that it is almost impossible to accomplish these two results satisfactorily by home treatment, for, as we all know, habits of a lifetime cannot easily be broken in the home environment, whereas, treatment in a sanatorium, if only for a few months, will usually accomplish the sought-for results, and the patient can return home if it is necessary and be no menace to his family, and can, moreover in many cases be guided on to a complete cure by his family physician.

It is needless to dwell on the general treatment of tuberculosis, as it is familiar to you all.

Next in importance to the general treatment comes the tuberculin treatment. While my experience with the tuberculin treatment has not been very extensive, I have made a very careful study of the cases which I have had, and will give my experience in brief. I have kept a record of twenty cases who have taken the tuberculin treatment for two months or more. Fifteen were rather inactive cases, most of them appearing to have reached a stationary period; three were rather active cases in the second stage of the disease, and two were cases of tubercular adenitis. In each case treated, the initial dose of tuberculin was very small, about 1-10,000 mgm. of the baccilen emulsion, and the maximum dose varied from 1 to 20 mgm. I attempted as nearly as possible to avoid any perceptible reaction, and therefore, increased the doses very carefully. Of the fifteen rather inactive cases treated, two were unimproved, eight were perceptibly improved, four were arrested, and one apparently cured. Of the three active, second stage cases, two were arrested, and one unimproved, and of the two tubercular adenitis cases one was cured and one improved. This means that of twenty cases treated with tuberculin, seventeen, or 85 per cent. were improved, and three, or 15 per cent. remained unimproved. Of course, all these patients took the general treatment conscientiously in addition to the tuberculin, but in many of them their previous efforts toward improvement on the general treatment alone had been without avail. To my mind tuberculin is undoubtedly of much value in many cases of tuberculosis if administered carefully, and particularly in chronic cases which seem to have reached a stationary period in the disease.

Before I close I wish to give you my experience with another form of treatment which has been agitated considerably during the past few years, that is the use of deep muscle injections of the succinimide of mercury. This treatment has been advocated principally by Surgeon Wright, of the Navy, who is physician in charge of the Naval Tuberculosis Sanatorium, in Colorado. During the International Tuberculosis Congress, held in Washington, a little over a year ago, I had the pleasure of meeting Dr. Wright, and became rather enthused over his mercury treatment. At that time I was the resident physician of the District Tuberculosis Hospital, and I accepted Dr. Wright's offer to inject a series of twenty patients for me, which he did. With the assistance of Dr. T. F. Smith, of Washington, I gave fifty patients the treatment extending over a period of from three to six months, personal letters of advice being received from Dr. Wright during that time. The most careful records were kept of thirty-five of these patients, whom I had in the sanatorium, routine physical examinations, sputum analysis and urinalysis being made, and a careful record of the temperature, pulse and respirations being kept. Of the fifteen private cases treated, I was unable to keep as complete records, but a careful temperature chart was kept and monthly examinations were made. These fifty patients ranged from incipient to far advanced cases, but in no case was there any improvement which could possibly be attributed to the mercury, with the exception of two

cases, both of whom gave a history of specific infection. Many of the advanced cases became progressively worse and died, and the incipient cases taking the treatment did not seem to do as well as did those taking the general treatment alone, for the injections caused more or less discomfort in all cases, and in many of the patients caused digestive disorders.

I believe Dr. Wright's apparent results can be accounted for through two factors. First, his patients obtained most excellent general measures, receiving routine sanatorium treatment in a favorable climate, and the most nutritious diet obtainable; and, second, he drew his cases almost entirely from the enlisted men in the navy, and we all know how prevalent syphilis is among the enlisted men in the service, even though a history of specific infection cannot always be obtained.

In closing, I wish to make an appeal to the physicians of Roanoke to bear in mind the frequency of tuberculosis, and to use all the means at their command for making early diagnosis. At present I believe, with the majority of physicians, that the general open-air treatment, particularly in suitable sanatoriums, is the only "specific" for tuberculosis. I can say positively that tuberculin is of much value in some cases, but not in all cases. I do not believe there is any treatment at present, other than these two methods, which has any marked tendency to inhibit or cure the lesions of pulmonary tuberculosis, but I feel that we should approach any new form of treatment advanced in a receptive state of mind, and investigate its merits thoroughly.

Proceedings of Societies, Etc.

Medical Examining Board of Virginia.

The semi-annual session was held at Lynchburg, December 14-16, 1909. Present:—Drs. R. W. Martin, President; R. S. Martin, Secretary; A. S. Priddy, E. T. Brady, R. B. James, H. V. Stephenson, Samuel Lile, Herbert Old and E. C. Williams.

On presentation by Dr. Old, it was

Resolved, That the Medical Examining Board of Virginia enter into reciprocity with North Carolina Board on terms proposed by their secretaries.

Dr. James moved that No. 38 having passed this Board as an Osteopath and being also a graduate of a regular medical college, be granted a regular certificate if he should make an average of 75 per cent. on Materia Medica and Therapeutics and Practice, Diagnosis and Etiology and pay an additional fee of ten dollars. Adopted.

It was moved by Dr. Lile that No. 44 be granted Osteopathic certificate by paying additional fee of ten dollars. Adopted.

Dr. Old moved that the fee paid by Dr. J. R. Sutton for temporary permit be not returned. Adopted.

It was moved and passed that the Board meet in Richmond, Va., June 21-24, 1910.

Dr. Old moved that the Secretary have posted at each medical school in this State the time and place of the different meetings of the Board one month before each meeting. Adopted.

The Committee on Reciprocity recommended that the following applications be granted:—Drs. P. W. Miles, Milton, N. C.; B. H. Swain, Washington, D. C.; G. L. Boykin, Berkeley, Va.; P. B. Stephens, Phoebus, Va.; R. L. Phipps, Clintwood, Va.; S. E. Moore, Washington, D. C.

After some explanation, it was also decided to grant reciprocity to No. 7, after he sends his diploma from North Carolina Medical College, and to No. 8. when his reciprocity blank is properly filled out and filed.

The Oral Examination Committee recommended that certificates be issued to Nos. 4, 15, and 39; that Nos. 53 and 56 be rejected. Also No. 35 passed a successful examination; No. 34 failed to pass.

The Committee of the Board (Drs. A. S. Priddy, R. B. James, E. T. Brady) on the proposed changes in the medical law of Virginia, after conference with Drs. R. H. Whitehead, of University of Virginia; J. Shelton Horsley, of Medical College of Virginia, and A. L. Gray, of University College of Medicine, advise the following changes in the law:

First.—That all applicants for examination by the Board shall produce satisfactory evidence of good moral character, shall pay a fee of $10, present a diploma from a reputable and regularly chartered college of medicine in some State or Territory, and shall pass a satisfactory examination prescribed by the Board, before receiving a certificate.

Second.—That the present system of examining undergraduates shall be so changed that such examinations may be divided into two

parts arranged, so far as may be consistent, by an agreement with the three medical colleges in Virginia.

Third.—If any person shall obtain a certificate by misrepresentation or fraud, or shall become unfit for the practice of medicine and surgery, by reason of immorality, dissipation, disreputable practice, or violation of the law or other cause, the Board of Medical Examiners shall have power to revoke such certificate, after giving such person reasonable notice and opportunity to be heard, and whenever the Board of Medical Examiners shall revoke such certificate it shall notify the holder thereof of such action, and he or she shall immediately deliver to the Board, or its representative, his or her certificate.

It was also agreed between the committee and the representatives of the colleges that when a bill is drafted for proposed amendments a copy shall be furnished to each one of the medical colleges of Virginia, for examination before introduction in the Legislature.

It was moved and adopted that the fee for reciprocity for those coming into and going out of the State of Virginia be $25, and that all resolutions in conflict with this one be repealed.

Dr. Brady introduced the following resolution which was adopted:

That a committee be appointed to confer with the properly constituted authorities of the State medical schools and prepare a schedule of examinations which will conform to the curricula of those schools and enable the Board to give mid-term examination as recommended by the former Conference Committee.

Alphabetically arranged list of applicants for license to practice medicine, surgery, etc., who passed satisfactory examinations before the Medical Examining Board of Virginia, during its session December 14-17, 1909, held in Lynchburg, Va.

Biggs, M. H., Rutherfordton, N. C., University of Pa., 1897.

Bell, John H., Bridgewater, Va., Univ. of South, 1909.

Bovell, Alfred E., Washington, D. C., Howard University, 1909.

Bradford, H. C., Norfolk, Va., Univ. Col. of Med., 1908.

Bradshaw, Thos. G., Franklin, Va., Medical Col. of Va., 1909.

Boykin, G. L., Berkeley, Va., Univ. of Nashville, 1907.

Berman, B. I., Norfolk, Va., Medical Col. of Va., 1908.

Couch, S. C., Coulwood, Va., Ky. School of Med., 1908.

Edwards, Robert L., Richmond, Va., Univ. of City of New York, 1894.

Haynes, Baxter M., Cliffside, N. C., N. C. Med. Col., 1905.

Hacker, O. W., Roanoke, Va., Medical Col. of Va., 1909.

Harris, A. W., Jr., Petersburg, Va., Howard University, 1910.

Iden, B. F., Jr., Manassas, Va., Univ. of Va., 1909.

Jone, Lee, Greensboro, Ala., Univ. of Va., 1909.

Johnston, J. A., Natl. Soldiers' Home, Va., University of Pa., 1893.

Kahn, Bernard L., Philadelphia, Medico-Chir. College, Philadelphia, 1909.

Miles, P. W., Milton, N. C., Univ. Col. of Med., 1908.

Murray, Geo. S., Danville, Ill., Edinburgh University, 1901.

Moore, S. E., Washington, D. C., Univ. of Pa., 1898.

Meloy, C. R., Charlottesville, Va., Johns Hopkins Univ., 1906.

McCrary, Joseph R., Jonesboro, Tenn., Am. School Osteopathy, 1903.

Patterson, T. E., Ransons, Va., Balto. Medical College, 1909.

Parks, P. D., Richmond, Va., Univ. Col. of Med., 1909.

Phipps, R. L., Clintwood, Va., Louisville Hosp. Med. Col., 1908.

Roche, Mary E., Williamsburg, Va., Womans Med. Col., Baltimore, 1908.

Swain, Benj. H., Washington, D. C., Univ. of Nashville, 1907.

Stephens, P. B., Phoebus, Va., N. Y. Homeopathic Med. Col., 1894.

Smith, H. R., Appalachia, Va., Ky. School of Med., 1908.

Sparks, W. C., Charlottesville, Va., Univ. of Va., 1908.

Watson, E. A., Washington, D. C., Howard University, 1909.

Wolfe, J. M., Marion, Va., Chattanooga Med. Col., 1907.

Webb, J. B., Abingdon, Va., Univ. of South, 1907.

Book Notices.

The Physician's Pocket Account Book. By J. J. TAYLOR, M. D. Bound in full leather, 24 pages practical instructions for physicians; 216 pages of accounts. Price, $1 per copy. Published by The Medical Council, 4105 Walnut St., Philadelphia, Pa.

This book is a complete, simple and thoroughly efficient account book, and absolutely legal. It does not use hieroglyphics. It contains 24 pages of business instructions for physicians, under the headings of "Importance of a due bill," "Cautions," "Statute of Limitations," "Form for Wills," "Dying Declarations," "Saving and Investing," "Instant treatment of Poisoning," etc. Entries can be made in a fraction of a minute, and never require any posting.

The Practitioners' Visiting List for 1910.

An invaluable pocket-size book containing memoranda and data important for every physician, such as incompatibles, poisons, antidotes, extensive table of doses, table of diseases and remedies therefor, directions for ligation of arteries, and ruled blanks for recording every detail of practice. Bound in flexible leather, with flap and pocket, pencil, with rubber, and calendar for two years. Price by mail, postpaid, to any address, $1.25. Thumb-letter index, 25 cents extra. Descriptive circular showing the several styles sent on request. Lea & Febiger, Publishers, Philadelphia and New York.

Arthrosteopic Surgery. By STEWART L. McCURDY, A. M., M. D., Orthopedic Surgeon to Columbia and Presbyterian Hospitals, etc., Pittsburgh, Pa. Medical Abstract Publishing Co., Pittsburgh, Pa. 24mo. 214 pages. Flexible leather. $1.

This is a strictly synoptical abstract of surgery of the extremities and bones—including dislocations, fractures, etc. For emergency purposes, it serves the doctor as a reminder of points in diagnosis, treatment, etc. Except to refresh memory, one would scarcely rely on it when he has the time and opportunity to consult the standard books or books on surgery with reference to major surgery. It serves also well as a review book for examinations before Boards, or in graduating classes, etc. Its size enables the doctor to carry it about with him in his pocket, and as he travels from patient to patient, he can well use it for the suggestions it contains.

Visceral Surgery in Abstract. By ACHESON STEWART, M. D., Junior Surgeon, Mercy Hospital, Pittsburgh, Pa. Medical Abstract Publishing Co., Pittsburgh, Pa. 24mo. 178 pages.

This is a companion book to the Arthrosteopic Surgery, noticed above; and all the general remarks of commendation of that manual on surgery of the joints and bones apply equally to this one on Visceral Surgery. Same size, price, etc.

Modern Materia Medica and Therapeutics. By A. A. STEVENS, A. M., M. D., Professor of Therapeutics and Clinical Medicine, Woman's Medical College of Pennsylvania, etc. Fifth edition, thoroughly revised. Philadelphia and London. W. B. Saunders Co. 1909. 8vo. 675 pages. Cloth, $3.50 net.

This revised edition is in conformity with the 1905 revision of U. S. Pharmacopeia. A number of new remedies, and many new formulæ have been incorporated in this edition. The sections descriptive of the remedies, of their physiological action and of their therapeutic uses are up to date, and are complete enough for the purposes of the practitioner. Brief sections on Actinotherapy, Roentgen Rays, Radium, Lumbar Puncture, etc., are given. About 140 pages are devoted to Applied Therapeutics, as concern most of the common diseases, as well as many symptomatic conditions. The book deserves rank in the practitioner's reference library.

Surgical Diagnosis. By DANIEL N. EISENDRATH, Professor of Surgery, Medical Department of University of Illinois, etc. Second edition. Thoroughly revised and enlarged. With 574 Original Illustrations, 25 of them in colors. Philadelphia and London. W. B. Saunders Co. 1909. 8vo. 885 pages. Cloth, $6.50 net; half Morocco, $8 net.

From the contents of the first edition about two years, it was easy to predict a standard position for this book—so well prepared and practical in its nature. But so rapid have been advances in medical science, even in that length of time, that the accepted views then of the localization of the motor centers in the cortex of the brain have been shown to be erroneous—requiring revision of the section on that subject. The chapters on cystoscopy and ureteral catheterization have also been rewritten.

The section upon the diagnosis of renal lesions has also been recast, so as to conform to more modern views. The profusion of illustrations —most of them from original photographs, etc. —add greatly to the descriptive portions of the text. In short, of the up-to-date books on "Surgical Diagnosis," none that we have seen excels this one. The book is finely issued, has an excellent index, and is suited alike to the wants of professor, student and general surgeon.

Exercise in Education and Medicine. By R. TAIT McKENZIE, B. A., M. D., Professor of Physical Education, and Didector of the Departments, University of Pennsylvania, etc. With 346 Illustrations. Philadelphia and London. W. B. Saunders Co. 1909. Small 8vo. 406 pages. Cloth, $3.50 net; half Morocco, $5 net.

This is a book that may well be recommended to all educators, whether in medicine or academies or colleges. It does not attempt too much. Proper precautions are given as to the classes to be taught this or that form of exercise. If the student of this book will properly apply the principles taught—whether male or female—the robustness of the race would be greatly improved. Properly built and equipped gymnasia, better playgrounds for children, etc., are subjects that the people, as well as doctors, are beginning to insist upon, which, when properly used, will help most materially to develop sound minds in healthy bodies. The overstrain of base-ball, foot-ball games and the like, as now undertaken, are both dangerous to permanent health, as also conducive to serious personal injuries. For such games, more stringent rules should be fixed to prevent easily avoidable dangers. The doctrines of a book like that before us are to be approved.

Text Book of Obstetrics. By BARTON COOKE HIRST, M. D., Professor of Obstetrics, University of Pennsylvania, etc. Sixth Edition, Revised and Enlarged, with 847 Illustrations, 43 of them in Colors. Philadelphia and London. W. B. Saunders Co. 1909. 8vo. 992 pages. Cloth $5 net; half Morocco $6.50 net.

It ha been said that one modernly written book on obstetrics is as good as any other, for it is a finished branch of study; but such is not so. Each year or two develops something new, even in the practice of obstetrics. Hirst's textbook has been progressively better with each edition. Chapters have been added in this edition on operations in obstetric practice which formerly were deemed to be in the scope of the abdominal surgeon alone. As a text-book for the student or the practitioner there is none that is more practical—covering almost every conceivable condition of the puerperal woman until childbirth is completed. The profusion of illustrations, added to the descriptive values of the text, give the book a special clinical value. We know of no one volume work on obstetrics that is better than this.

Clinical Examination of the Urine and Urinary Diagnosis. By J. BERGEN OGDEN, M. D., of New York, etc. Illustrated. Third Edition, thoroughly Revised. Philadelphia and London. W. B. Saunders Co. 1909. 8vo. 427 pages. Cloth. $3 net.

The demand for this third edition has given the author opportunity to eliminate such sections as were practically obsolete, because of the rapid advances in physiologic chemistry, to rewrite or thoroughly revise other sections, and to add chapters with reference to urinalysis of use to every doctor. After sections on the detection of various changes in normal urine, sections on the clinical significance of such changes are added, which makes the book one of daily utility by the practitioner. A valuable suggestive chapter is added on urinalysis for life insurance examinations. In the table of contents the page for this section is printed 300, whereas it should be 396. Such a typographical error, however, does not affect the value of the book. The doctor who buys this work will get a good one on the subject named in the title.

Editorial.

Alkaloidal Medication.

The active therapeutic principles of most drugs derived from the vegetable kingdom are found in their alkaloids. It oftentimes requires a pound or so of the crude drug to obtain even a few grains of its therapeutic alkaloid or alkaloids. For years, the powdered crude drug, or tinctures, fluid extracts, etc., made from them were used; but the bulkiness and oftentimes the large nauseating doses of these required for a given effect have led pharmaceutical chemists to seek from the drugs agents which contain the medicinal properties in

soluble and absorbable form. Much to the delight of physician and patient, such search has resulted in the introduction of a long list of easily soluble alkaloidal salts, usually made up in the form of tablets, in doses ready for administration by the mouth, hypodermically etc. Synergistic compounds of these alkaloidal salts in tablet form are very generally on the market, or two or more of these alkaloids to suit the views of the individual practitioner can be furnished by the manufacturing chemists. These alkaloidal tablets or granules, as a rule, retain their therapeutic qualities indefinitely, if kept in properly stoppered bottles, whereas tinctures, fluid extracts, etc., very generally precipitate their active principles by long standing.

The value of alkaloidal medication has recently been again called to our attention by conversation with a country physician of wide experience. He was telling us of the very many preaprations he was able to carry around with him without inconvenience, in the form of alkaloidal tablets—practically enough to meet the emergencies of a large practice—and of the combination prescriptions he can make out of them He especially speaks of the Abbott Alkaloidal Company as the makers of practically the whole series of medicinal alkaloids, and furnishing them in suitable pocket cases, etc.

It is not to be understood from these remarks that all medicinal virtues are to be found in the alkaloids. There are too many valuable preparations of the pharmaceutical chemists that have no bearing on the alkaloids. These mostly are in the form of distinct chemicals requiring the chemist's laboratory, etc.

Sterilization of Confirmed Criminals, Etc.

The paper on this subject by Dr. Charles V. Carrington, surgeon to the Virginia Penitentiary, etc., has been widely enough read to show its importance to the public. And through his influence, a bill is pending in the General Assembly of Virginia advocating its adoption "to prevent procreation by confirmed criminals, idiots, imbeciles and rapists," which we would be glad to know is to become a law in Virginia. The bill is sufficiently safeguarded as to how and under what circumstances "sterilization" may be practiced.

Public Health Reports

For February 4th, contains an article by Passed Assistant Surgeon L. L. Lumsden, of the P. H. and M. H. Service, on "What the Local Health Officer Can Do in the Prevention of Typhoid Fever," which will be found instructive. Dr. Lumsden read a paper at the last session of the Medical Society of Virginia as to the duties of the practicing physician along this line. Careful following of the instructions given might prove the fallacy of the belief current among the people generally that the occurrence of a certain amount of typhoid fever every year is inevitable.

The Medical Review of Reviews,

Beginning with January, will be edited by Dr. William J. Robinson, formerly editor of the Critic and Guide, Therapeutic Medicine, and The American Journal of Urology. The scope of the journal will be enlarged though the subscription price remains the same.

Messrs. Eli Lilly & Co.

Have engaged the services of Dr. Charles C. Haskell, of Columbia, S. C., for special work in experimental therapeutics and pharmacology in their laboratories.

The Southside Virginia Medical Association

Will hold its next quarterly meeting at Suffolk on Tuesday, March 8th. Dr. R. L. Raiford, of Sedley, is President, and Dr. E. F. Reese, Jr., Secretary, of this association.

The Legislative Committee of the Medical Society of Virginia

Is doing good work, and the prospects as to results are encouraging.

Obituary Record.

Dr. Arthur Page Belew

Died at Edinburg, Va., December 4, 1909, after a short illness. Dr. Belew was born October 24, 1848, and had lived in Edinburg since early childhood. He graduated in medicine from the University of Virginia in 1870, since which time he has taken a foremost place in the profession of this State, being prominently identified with both State and local societies. The doctor possessed many fine traits of character, and resolutions adopted by the Shenandoah County Medical Society, etc., attest his great popularity and the esteem in which he was held by the profession as well as laity in his community. His wife and two children survive him.

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THE TREATMENT OF SUPPURATIVE SINUSES AND FISTULAS.*

By L. H. REICHELDERFER. M. D.. Washington. D.C.
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No doubt every one here to-night has had his patience sorely tried by his failure to bring about a closure of some persistent sinus, or fistula, which resisted every effort made to effect its cure, and by aggravating relapses when an apparent cure had been attained. These old secreting fistulas are, and always have been a bugbear, because of the uncertain results obtained by any or all methods of treatment.

I wish to refer briefly to a few points in the treatment of these fistulous tracts, and more especially to two or three procedures which have been advocated comparatively recently. Strictly, the term sinus should refer to suppurative channels leading into blind pockets, or cavities, in bone or parenchymatous tissues, while the term fistula should apply to suppurative tracts leading into hollow organs, but, as a matter of fact, the terms are used interchangeably, especially in the recent literature dealing with this subject.

It should be said in the beginning that surgery has done more than any other method of treatment in dealing with these tracts; this is easily understood when the etiology and pathology of the conditions are considered; naturally we expect best results to follow the surgical removal of the tubercular tissue, dead bone, etc., which cause so many of these cases. It should be noted also that with any form of surgical treatment—either radical or conservative—appropriate prophylactic, hygienic and dietetic measures must be given their properly important place. But after the most careful surgical treatment many cases will recur, and further operation will be deemed hopeless, or will be refused; many sinuses, from their location or extent, are inoperable from the first. These and other considerations will always furnish a large class of cases where palliative, or some easily applied and conservative form of treatment must be used.

For decades these tracts have been treated by the injection of a suspiciously long list of antiseptics, irritants, astringents, etc., among which the well known glycerine emulsion of iodoform is probably as well known and as efficacious as any. It seems well established that watery solutions are harmful, as they keep the sinus walls in a macerated condition and retard granulation. In a few cases where sinuses have seemed indolent, I have found that occasional irrigations of Harrington's solution have seemed to lessen discharge and promote healing. This solution, however, is powerful, and should not be used repeatedly, nor where there is any communication with body cavities.

The value of Wright's system of vaccine therapy was early considered in connection with these cases. One difficulty encountered was that in suppurating tracts there is nearly always present a mixed infection; this is practically always true of tubercular sinuses. According to Ohlmacher, these cases of mixed infection offer a much less promising outlook than where there is a single bacterial species. He claims, however, that good results follow the administration of a mixed vaccine, and recommends especially the simultaneous administration of tuberculin and the vaccine of the secondary invader, or invaders. The ideal treatment by autogenous vaccines and determination of the opsonic index is probably too laborious and expensive to be considered in most cases; but good results have been obtained by the administration, under clinical control, of stock vaccines, and the treatment is certainly one which should be considered in obstinate

*Read at a meeting of the Medical and Surgical Society of the District of Columbia, December 2, 1909.

cases; it can be used to good advantage in conjunction with the treatment by hyperemia, or with the bismuth paste injections.

Another of the newer methods of treating these fistulous tracts is by the production of artificial hyperemia, according to the methods of Bier. He classifies the hyperemia, first, as active, or arterial, such as is produced by the application of heated air; second, as passive, or venous, produced by the application of cupping glasses, or elastic bandages. The active hyperemia, so useful in chronic arthritis, has no application in surgical tuberculosis, but the obstructive or passive hyperemia is often most useful. The elastic bandage is the method of choice; the cupping glasses are used only on the body, or regions where constriction is impossible. The treatment may be applied once or twice a day for one or two hours each time. Bier claims that dangerous symptoms, or failure to secure favorable results, are often due to the neglect of the following rules, upon which he lays great stress:

1. The pulse should always be perceptible below the constriction.

2. The patient should experience no annoyance from the constriction.

3. There should be no increase of pain at the point of disease, and no production of pain at the point of constriction.

4. The color of the skin distal to the constriction should be a bluish-red, and not dark.

The technic of the production of hyperemia seems simple, but Bier states that considerable practice is necessary to secure good results. He warns us especially in the use of cupping glasses to use only sufficient suction to produce a mild red hyperemia, and to make the application intermittent by using the suction for five minutes, followed by a rest of three minutes, the process to be continued for about forty-five minutes. The necessary constriction of a limb is produced by taking a two-and-one-half-inch soft rubber bandage and applying it slowly and evenly, not too close to the affected part. The turns should overlap until a broad band is produced, as a very narrow band is more apt to produce pain. I have used this plan of treatment in only a few cases, but secured good results in most of them. J. B. Murphy, who has had a large experience with the Bier treatment in surgical conditions, states that it is a most valuable remedy, whose efficiency is much under-rated. It is easily applied, and unless used very carelessly, has in it no element of danger.

The most important recent advance in the treatment of suppurative fistulas and sinuses is by the injection of bismuth-vaseline paste, as advocated by Dr. Emil G. Beck, of Chicago. His work has shown the great value of these injections, both as an important aid in diagnosis, and also as a very efficient therapeutic agent in curing this troublesome class of cases. It was while using the bismuth mixture for diagnostic purposes that he was first made aware of its possible curative value. In 1906 he injected a psoas abscess in a child with a 33 per cent. bismuth-vaseline paste for the purpose of locating definitely the ramifications of the sinus by the X-ray, preparatory to operation. To his surprise, the tract remained permanently closed after the one injection.

Radiographs taken after these injections are of the greatest value to the surgeon when undertaking radical operations for the cure of these conditions, as they show the very extensive and complex ramifications of many of these old sinuses; they show, too, how difficult must be the complete extirpation of these tracts and explain the frequent failure of operations to cure. Stereoscopic radiographs are still more valuable, as they show the true depth and relation of the sinuses to other structures. Beck gives the following formulas for the paste:

No. 1. *For diagnosis and early treatment—*

Bismuth subnitrate (arsenic-free),	33 parts.
Vaseline,	67 parts.

Mix while boiling.

No. 2. *Formula for late treatment—*

Bismuth subnitrate,	30 parts.
White wax,	5 parts.
Soft paraffin (melting at 120°),	5 parts.
Vaseline,	60 parts.

Mix while boiling.

A smoother paste results if the bismuth is added slowly to the boiling vaseline with constant stirring. It is important that no water be spilled into the paste while boiling, and syringes used for injection must be dry sterilized. Some advocate the addition, in certain cases, with profuse discharge, of 1 per cent. formalin, but it is not usually advisable. Formula No. 1 is to be used for diagnostic purposes and for early treatment until the discharge has lessened and the sinus partly closed, when the harder paste may be employed. Beck,

in a late note, however, states that recently he has used the softer paste almost exclusively, and believes that more generally satisfactory results will be secured by it.

The technic of the injections is very simple. The paste is sterilized and thoroughly agitated just before being drawn into the syringe. A glass syringe with asbestos packing and a blunt urethral nozzle is most effective. As much pus as possible should be pressed or wiped out of the sinus before injecting, but no hemorrhage should be induced. The opening of the fistula should be cleansed with alcohol (no water), the syringe nozzle pressed firmly against the opening, and the paste forced slowly in until moderate pressure is complained of. The syringe is then removed and a pledget of gauze held against the opening until hardening has occurred, which may be hastened by the application of an ice cap. The patient should remain quiet for several hours after an injection. No immediate ill effects have been observed, such as sepsis, hemorrhage or embolism; occasionally a transient febrile reaction takes place, but soon subsides. In a small percentage of cases one injection has sufficed for cure, but, as a rule, repeated injections are necessary. It is well to wait a week after the first injection, and then to repeat at intervals of five or ten days, as indicated by the lessening of the discharge, which changes from a purulent to a watery character.

There are several theories as to the action of the paste upon suppurating sinuses. Ridlon and Blanchard think that it acts only in a mechanical way by squeezing out the pus and preventing the ingress of air carried germs. Don thinks the favorable action may be due to the slow liberation of nitric acid. Beck thinks that when patients are exposed to the X-rays, after being injected, the bismuth may become radio-active, and produce healthy granulations. That this cannot be the only effect, is shown by the fact that many fistulæ heal after injections without being exposed to the X-rays. He also suggests that the bismuth exerts a destructive influence on the germs present, and that the paste acts as a trestle-work by means of which healthy granulations are formed in the sinus tract—much as iodoform-wax plugs, or decalcified bone chips are recommended to aid the obliteration of bony defects.

Beck has shown by experiments on guinea pigs that the edges of bismuth paste deposits are infiltrated with young connective tissue cells and fibers, which would seem to show that the paste does act as a framework for the growth of connective tissue. It has been definitely decided by the taking of successive X-ray pictures that the paste is gradually absorbed, and that it finally disappears entirely.

The injections of bismuth paste are not entirely free from danger, as toxic effects have been reported with two or three fatalities, caused probably by a too reckless dosage before the danger was appreciated. Beck believes that it is a safe rule never to inject more than 100 grams of 33 per cent. paste at a time, and not to repeat injections too frequently where cavities are large enough to allow the accumulation of any considerable quantity of bismuth.

The symptoms of bismuth poisoning are acute stomatitis, black border around the teeth, dark discoloration of mucous membrane, albuminuria, diarrhœa and nephritis. These symptoms should be watched for, and if they appear, the residual paste should be promptly removed by injecting into the cavity heated olive oil to dissolve the paste, which is then removed by suction.

If large amounts of paste are needed to fill a cavity, the percentage of bismuth should be correspondingly reduced. Ridlon and Blanchard report cases which they injected with a mixture of white wax, one part, and vaseline, eight parts, where the action seemed to be about as favorable as with the bismuth paste. They advise against the injection of cases where the X-ray shows the presence of a sequestrum: in recent cases, where the sinus walls are thin and not well defined; where there are very large pus sacs, and when amyloid degeneration is present.

Beck states that in many cases tuberculous sinuses can be prevented by evacuating the contents of a cold abscess through a small incision and filling the cavity with 10 per cent. paste. This prevents secondary infection and often results in prompt healing.

Pennington reports a series of seventeen cases of rectal fistula treated with the bismuth paste with thirteen cures.

Dr. Joseph Beck has reported favorable results in the treatment of chronic suppurative diseases of the ear, nose and throat, such as suppuration of the accessory sinuses, chronic middle ear diseases, mastoids and similar con-

ditions. E. G. Beck reports 192 cases treated by himself and others, of tuberculosis, osteomyelitis, empyema and miscellaneous suppurative conditions, of which 64 per cent. are healed at the present time; 28½ per cent. are improved and still under treatment, and 1½ per cent. died during period of treatment or after.

Ochsner and Gibney report cases successfully treated by the method. I have used the treatment in ten cases, of which three were cured, four greatly improved, and three unimproved. One of the successful cases was a man of fifty-one, who had a small discharging sinus for about a year following an operation for periostitis of a rib; another was a case of suppurative sinus of the humerus in a boy of eleven following osteomyelitis; the third was a girl, aged fifteen, on my service in the Tuberculosis Hospital, who had persistent sinuses following two operations for bilateral cervical adenitis. There were sixteen or eighteen openings discharging profusely, and the girl's condition was such that no immediate operation was considered.

For several weeks injections of iodoform emulsion produced no improvement; bismuth paste was then tried with good effect from the first. The sinuses have all disappeared, and there is but one small granulating surface which is rapidly healing. Under the treatment, extending over about nine months, her weight increased from sixty-three to one hundred and twenty-seven pounds.

One case of empyema which had perforated the chest wall of a man suffering from pulmonary tuberculosis is interesting. The pleural cavity communicated with a pulmonary cavity and a bronchus, as was shown in a startling way when an interne injected peroxide of hydrogen, which the man coughed up for a couple of hours afterward. The discharge in this case saturated two dressings daily. After one injection of five ounces of bismuth paste the opening closed entirely; the man gained weight rapidly, and left the hospital, but returned in about two months, stating that the fistula had re-opened following a protracted spree. Although the amount of discharge is small, the fistula has since refused to heal.

This method of treating suppurative complications in chronic pulmonary tuberculosis promises to be very useful, as in these cases radical operative measures are inadvisable, as a general anesthetic is absolutely contra-indicated.

Beck has lately published the following conclusions:

1. A successful surgical operation for tuberculous sinuses, or fistulæ, depends principally upon an exact knowledge of the extent, direction, and number of sinuses before the operation is undertaken.

2. Radiographs obtained by previously injecting the sinus with a bismuth paste show distinctly the origin and extent of sinuses. Such radiographs should always be taken before an operation is decided upon.

3. Tuberculous sinuses, fistulous tracts, abscess cavities, including empyema, can be cured by injecting them with a 33 per cent. bismuth-vaseline paste, and in most cases surgical operations become unnecessary.

4. The formation of fistulous tracts may be prevented by opening cold abscesses, evacuating the fluid and immediately injecting a quantity (not exceeding 100 grams) of 10 per cent. bismuth-vaseline paste and not sealing the opening.

5. When sequestra are present, the injections should be tried for a reasonable length of time, and risky operations should be reserved as a last resort.

6. Bismuth subnitrate is a bactericidal, chemotactic substance which is slowly absorbed and slowly eliminated. Injections up to 100 grams of the 33 per cent. paste produce no toxic effects. In large doses, it may produce symptoms of intoxication, such as ulcerative stomatitis, black border of the gums, diarrhœa, cyanosis, dequamative nephritis, and loss of weight.

7. While these injections are effective in all suppurative sinuses and cavities, those of tuberculous origin respond to them more readily.

8. The secretions from sinuses change their character after the injection, becoming seropurulent, or serous, and micro-organisms gradually diminish and often disappear. Tubercle bacilli are no exception.

9. This method of treatment is applicable to the suppurative accessory sinuses of the head.

10. The patients regain their general health and gain rapidly in weight after the sinuses are closed.

11. The bismuth paste treatment of chronic suppurative diseases is not intended to displace all other well tried and valuable methods,

but to serve as an addition to them, which, owing to its simplicity and wide range of application, will no doubt find many adherents.

NOTE.—In preparing the above, material in the following articles has been freely abstracted: 1. Beck, Emil G.: Illinois Medical Journal, April, 1908; Transactions Sixth International Congress on Tuberculosis, 1908; Surgery, Gynecology, and Obstetrics, August, 1909; Illinois Medical Journal, October, 1909.

2. Ridlon, J. and Blanchard, W.—Journal Orthopedic Surgery, Aug., 1909.
3. Baer, William S., Johns Hopkins Hospital Bulletin, Oct., 1909.
4. Beck, Joseph C.,: Journal Amer. Med. Asso., Jan. 9, 1909.
5. Ohlmacher, A. P.: Journal Amer. Med. Asso., Aug. 15, 1908.
6. Pennington, J. Rawson: The Lancet-Clinic, Dec. 26, 1908.
7. Bier's Hyperemic Treatment: Myer and Schmieden, 1908.

1721 *Connecticut Avenue.*

DISCUSSION REPORTED BY DR. F. E. HARRINGTON.

Dr. Shands mentioned having had six cases, and referred to an article in *American Journal Orthopedic Surgery,* by Drs. Ridlon and Blanchard. He believed that many sinuses were caused by sequestra. Mentioned a case where a piece of bone was thrown off after six years, followed by a spontaneous closure of sinus.

Dr. Carr took exception to a hard and fast rule. He did not believe in filling up cold abscesses. He had always found that a thorough cleaning out and complete closure was attended with better success. He wanted to lay stress on the complete closure, as dry drainage was sure to fail, and a continuance of the sinus would result. Stated that the bismuth treatment resulted in about 33 per cent. of cures. Has used it in six cases with one failure. The average case under bismuth treatment showed a rise of temperature to 103 or 104 degrees Fahrenheit. If this temperature persists, he believes an immediate emptying of the sinus cavity should follow. There are certain organisms, notably those in the intestinal tract, that break up the bismuth, and the component nitrites are poisonous. He believes that bismuth should be given by mouth as a means of learning if there be any idiosyncrasy for the drug present. If no ill effect is noted any quantity may then safely be injected. He believes that no hip case should be operated upon until the bismuth method has been tried. Its use as a diagnostic method is by far the best.

Dr. Dunlop found that the use of the 30 per cent. bismuth paste produced a rise of temperature, in his hands, at Children's Hospital. He had, therefore, used the 5 per cent. strength with good results.

Dr. Vaughan said he was not so enthusiastic as the average. Prefers iodoform, 60 per cent. strength. Does not believe, however, in plugging any cavity. Prefers to seek out the cause of the sinus and, if possible, remove it and dissect out the sinus sack. Many cases would get well any way after a while, he believes.

Dr. Borden stated that as the causes of sinus were many, he did not believe that any one thing would cure them. He thought that the bismuth paste combined with radiography as a diagnostic means was good, as it often showed some distant pocket that may be the root of the evil and its presence not suspected. Believes that temperature is due to backing up of pus and holding it under pressure until it absorbs. Bismuth treatment is only suited to some cases, but as a means of diagnosis with the radiograph, can be applied to all cases.

Dr. Hagner suggests that solutions of argyrol give quite as good a picture, and can be easily removed, besides being non-irritating to the surfaces. He has used this method as a diagnostic means in enlarged pelvis of the kidney. As opposed to bismuth paste, argyrol could be used in sinus leading to the body cavities.

Dr. Kober asked Dr. Sternberg if, in his experiments, he had ever given bismuth a test to learn its bactericidal properties.

Dr. Sternberg stated that bismuth subnitrate *per se* has no antiseptic or germicidal properties; neither has iodoform. Their action is due to the splitting up into their components. Calomel was in the same class, and did not act *per se* as a germicide.

Dr. Reichelderfer stated in closing that in large quantities bismuth was poisonous, but he did not know the exact reason why; for that reason high percentages were not used in extensive cases. In laboratory tests the colon bacillus has been shown to split up the bismuth, and the resulting nitrites are probably the cause of the poison.

PYLOROSPASM.*

By JOHN J. GILBRIDE, A. M., M. D., Philadelphia, Pa.
Instructor in Diseases of the Stomach and Intestines and Assistant in the Laboratory of Clinical Pathology, Philadelphia Polyclinic; Assistant Demonstrator of Anatomy at the Medico-Chirurgical College, Philadelphia.

Pylorospasm consists in a convulsive contraction of the circular musculature of the pylorus. "Spasm involving the pylorus is of fre-

*Read in the Section on Medicine, Medical Society of the State of Pennsylvania, Philadelphia session, September 30, 1909.

quent occurrence, but is nearly always a secondary condition."[1] It is only the symptom and is seen most frequently in those conditions in which there is an associated increase in the hydrochloric acid secretion of the stomach, i. e. hyperchlorhydria, acute and chronic gastrosuccorrhea, gastric and duodenal ulcer, etc. Spasm of the pylorus is occasionally excited by rapid eating, indigestible food, coarse morsels of food, or after the introduction of very cold or very hot drinks, strong spices, etc.

There is a difference of opinion as to whether or not primary spasm of the pylorus ever occurs as a genuine motor neurosis. It is possible that such a condition may exist but from our knowledge of spasm of some of the other sphincters of the body there is usually a pathologic basis for such spasm. As the late Professor Riegel said, "Before we are justified in considering spasm of the pylorus as a genuine motor neurosis, we must be able to exclude all perversions of gastric secretion, all mechanical obstacles in the pyloric region, all adhesions, cicatrices," etc.

Pylorospasm is, therefore, usually secondary not only to disease of the stomach, but also to disease of other viscera.

In my experience spasm of pylorus is not of common occurrence in uncomplicated hyperchlorhydria, for cases that have an increase in the hydrochloric acid secretion are relatively common and yet there are very few of these patients who give a history of stomach cramp. While pylorospasm is met with in these conditions in which there is an associated increase in the acidity of the gastric contents, that increased acidity being due to either free hydrochloric acid or organic acids, it also occasionally occurs in those conditions in which there is a subacidity or even in anacidity. It occurs less frequently in carcinoma of the stomach, and the writer has seen it in a few instances in cases of pancreatitis, cholecystitis and appendicitis.

Pain or cramp is the most prominent symptom in spasm of the pylorus, and it varies in intensity, duration and recurrence in each individual case. The spasm with associated cramp may be of short duration, lasting only a few minutes, or it may continue for several hours, and in the more severe cases it may continue more or less intermittently for several days. These attacks may recur every few days, or weeks, or only once or twice a year, etc. At these times there is usually an increased peristalsis of the stomach which may readily be seen if one sees the patient during the attack. If the spasm occurs at a time when ingesta are present, the ingesta are delayed, and if the spasm is prolonged there may also be vomiting. In certain cases the spasm is felt by the patient to relax suddenly, and in other cases the termination of pain is slow and gradual. Some writers have stated that in the differential diagnosis of pylorospasm from gallstones, the pain of the former is much less severe. In so far as the difference of degree of pain is concerned in these two conditions, the pain may be and sometimes is just as severe in pylorospasm as it is in gallstone colic. This is my impression after having seen several patients during an attack of pylorospasm. Some of these patients even threw themselves about, doubling up their bodies, holding their arms tightly against the abdomen in order to get relief from the pain. In some cases the pain may be of a comparatively mild character. It must also be remembered that gallstone disease may be the cause of pylorospasm.

In ulcer of the pylorus or duodenum, pylorospsm may be and frequently is a distressing and common symptom. As stated above, the spasm may recur at short intervals or there may be weeks or months of comparative freedom from this symptom. These intervals of absence of symptoms may be due to the healing of an ulcer and its subsequent relapse or to the formation of a new ulcer. The importance of pylorospasm as a symptom in gastric ulcer was impressed on me some years ago while calling at the house of a neighbor physician whose son, also a physician, had an attack of so-called gastralgia. He died several months afterwards from a perforated ulcer of the stomach.

Chronic appendicitis is not infrequently a cause of chronic dyspepsia, and that the diseased appendix may cause pylorospasm was first called to my attention by Dr. John B. Deaver, of Philadelphia, who informed me of the cure of the pylorospasm in one of his patients by the removal of a diseased appendix; and within the past year I have had several patients who suffered from spasm of the pylorus, occasional attacks of vomiting, etc., and in

1. Riegel.

whom I could not find any lesion except a moderately tender appendix. These patients gave a history which suggested that they had had a slight attack of appendicitis. In the case of a patient suffering from an inoperable carcinoma of the stomach, which came under observation several months ago, spasm of the pylorus was very severe.

Another interesting case was referred to me recently by Dr. Charles J. Hoban of Philadelphia. The patient, a man fifty-one years of age, had complained of almost constant cramp-like pain in the epigastrium for the previous two weeks; nausea and vomiting were present. He was having three or four loose stools a day and was losing in weight. He had a similar attack two years before, confining him to bed for three weeks; jaundice was present at that time. He had also been jaundiced on two other occasions and was tender to pressure over the stomach and gall bladder, etc. Pylorospasm was marked giving him great distress; no jaundice at this time; Cammidge reaction was positive. The diagnosis was gallstone disease with a probable chronic pancreatitis. The probability of the presence of a duodenal ulcer was also kept in mind, owing to the pylorospasm. This seemed less likely, however, as analysis of the gastric contents showed an absence of free hydrochloric acid. The total acidity was forty and occult blood was not found in either the stomach contents or the feces. The presence of gastric or duodenal ulcer is not altogether incompatible with these findings, but their occurrence under such circumstances is unusual.

Operation performed for the relief of the disease of the bilary passages revealed a cholecystitis and a moderate chronic induration of the head of the pancreas. Drainage of the gall bladder gave complete relief.

Secondary spasm of the pylorus, if it recur frequently, may lead to motor insufficiency, and finally to dilatation of the stomach.

1934 *Chestnut Street.*

THE RESULT OF A LATE GONORRHEA.*

By JOHN J. LLOYD, JR., M. D., Lynchburg, Va.

In presenting this paper to-day I have nothing new to offer on a very old subject but I hope that it may give rise to a discussion and in that way it may renew our interest in this disease.

I am fully aware that gonorrhea is a very much discussed disease and that full accounts of it from every aspect are easily obtainable; but I believe that the general practitioner, the man who treats nine-tenths of cases, is either woefully ignorant of the direful results following an uncured gonorrhea or else he is criminally negligent in his duty to his patients when he lulls all fears by telling them they are cured just as soon as the discharge ceases.

Gonorrhea is one of the oldest diseases of which we have any historical record. Even back in the times of Moses it was recognized as a pest—"If any man hath a running issue out of his flesh, because of his issue he is unclean." We can trace it straight on down through the centuries; sometimes considered a distinct disease and sometimes confused with syphilis and chancroid.

In the latter half of the nineteenth century gonorrhea was recognized as a distinct disease, and in 1879 Neisser discovered the essential cause—the gonococcus.

Noeggerath (1) of New York City, was the first to call attention to the extent of the ravages of the disease in women. He said that eighty per cent. of men have had a gonorrhea, and of these ninety per cent. were never thoroughly healed, and that of married women three in every five have gonorrhea. These figures are extreme, but they emphasize the frequency of the disease more than a conservative estimate would.

It is a generally conceded fact, I believe, that gonorrhea lasting more than six weeks has become chronic, generally posterior, and that practically every chronic case leaves some focus capable of bearing infection and causing future trouble in the host.

An acute gonorrhea either clears up entirely in from three to four weeks or the inflammatory process becomes localized. As a result of the continual inflammation, there is a round celled infiltration of the subepithelial tissues covered by a normal or edematous and loosened cylindrical epithelium. Real ulceration is rare but after a while this infiltration undergoes a sort of sclerosis; spindle shaped tissue cells and fibres develop and the process becomes a fibroid scar covered by stratified squamous epithelium instead of cylindrical.

*Read before the South Piedmont Medical Society at Lynchburg, November 16, 1909.

The inflammatory changes take place in the part of the urethra best supplied with mucous glands—the prostatic and bulbous portions. The process occurs around the opening of the gland ducts, and in consequence of the contraction these ducts become occluded and retention cysts or abscesses result.

Generally this process is limited to the subepithelial tissues, but when by extension it invades the periurethral tissues the contraction of the fibrous scar produces an encroachment on the calibre of the urethra—a stricture.

The frequency with which the prostate and vesicles and periurethral glands are affected in chronic posterior urethritis is appalling. In practically every case of chronic posterior urethritis Cowper's glands and the sinus pocularis are involved, and it is only a very short step through the prostatic and ejaculatory ducts to the prostate and vesicles.

A stricture by causing obstruction with retention of secretions in the urethra produces a consequent irritation and discharges—i. e. a gleet.

Superimposed upon the chronic gonorrhea process is generally implanted a mixed infection with one or more of the other pus organisms.

A gonorrheal cystitis may start up at any time during the course of posterior urethritis.

Periurethral abscesses are quite common and are often the cause of stricture or a recurrent gonorrhea.

A chronic gonorrhea may be hidden away and present absolutely no clinical evidence of its existence until by excesses in eating or alcohol or excessive fatigue the resistence of the urethral tissue is lowered and the urine made irritating, when the dormant focus takes on new vigor and an acute exacerbation is the result. Such a case is not so very rare. I have seen several in my own work, and they are rather difficult to explain should the subject be a married man.

That gonococci may lie dormant in the deeper tissues for years and yet be capable of producing an acute outbreak in the host or producing gonorrhea in another is well illustrated by the following two cases:

Case I. J. H., age 25 years, gonorrhea five years previously which lasted four months; was treated by hand injections and by medicine per stomach. Drank whiskey all through and considered it a very mild "case." He had heard of "latent gonorrhea" and as he contemplated marriage he consulted me to see if he was all right.

Physical examination showed no discharge whatever. First urine showed shreds; second glass clear. Urethra admitted No. 32 F. easily. Prostate—right lobe very much enlarged, boggy and tender; rest of prostate normal. Right vesicle enlarged and tender. The secretion expressed showed large number of pus cells and after the fourth treatment intracellular and extracellular cocci were found in large numbers. This case cleared up completely in four months; he has since married and is the father of one and prospective father of a second baby.

Case II. 1908. H. I. C. had gonorrhea in 1898 lasting three months followed by gonorrheal arthritis for three months more. Second gonorrhea in 1901 lasting three months. Has had a recurrent gleet at short intervals ever since last attack. He consulted several doctors about this discharge but was told that it was due entirely to "uric acid."

The urethra contained a stricture in the pendulous part which admitted a 20 F. sound.

The prostate was universally enlarged, boggy and tender and the vesicles were tensely distended and painful. The expressed secretions showed numberless pus cells although I was unable to demonstrate gonococci in any specimen examined.

He responded well to treatment for six weeks at which time he moved to another city and I referred him to a physician to continue treatment and am unaware of the outcome of the case.

This man's married life is so full of interest that I give it in detail:—

Married in 1902; wife had increasing dysmenorrhea after three months, becoming pregnant after six months of married life. Pregnancy was terminated by easy birth of a male baby who developed ophthalmia and died when three weeks old from pneumonia—the mother dying from "child bed fever" four weeks after confinement.

In 1904 patient married second time. Wife well apparently until two years after birth of child which occurred eleven months after marriage. Two years after confinement she suffered from increasing dysmenorrhea and con-

sulted me in November, 1908, at which time I found a large mass in left iliac fossa which I removed three weeks later and found to be a "tubo-ovarian abscess." It is a generally accepted fact that a chronic gonorrheal prostatitis plays a large part in senile hypertrophy of that gland.

Gonorrhea in women is very common—it is estimated that from one to three in every five married women have it. The acute disease may be so mild as to go unnoticed or it may be very severe as in the male.

The pathology is just the same as in the male with the essential anatomical differences:—

1. The urethra and its glands, particularly the girdle of the mucous glands around the meatus and Bartholins glands.

2. The vagina with its mucous glands and the cervix are the points of predilection.

The process, as in the male, often lies dormant in one or more of these localities, and after childbirth, abortion or some other debilitating condition the gonococcus takes on new life and we have an ascending gonorrhea to the body of the uterus, tubes, ovaries and peritoneum.

Often we see a condition of relative immunity between husband and wife and neither infects the other, but sometimes we see the vicious circle in which one or both have an acute gonorrhea continuously, or we may meet cases that are infectious at one time and not at another, which is probably explained by the more abundant secretion accompanying an orgasm or the menses.

Gonorrheal arthritis, while not a very frequent sequel of gonorrhea, is of so serious moment when it does occur that it should not be left out of consideration nor should the still more rare sequel or complication—endocarditis.

Neurasthenia and hysteria are frequent accompaniments of a late gonorrhea and we all dread them.

Aside from the suffering and danger to life accompanying an attack of gonorrhea there is the addition of its contribution of race suicide. Noeggerath found that of eighty-one wives of men known to have previously had a gonorrhea, forty-nine, 60.5 per cent. were absolutely sterile. Glunder found in eighty-seven sterile marriages gonorrhea existed in sixty-two or 71.3 per cent. of them. Kehrer found that in ninety-six sterile marriages forty were due to sterility in the husband produced by gonorrhea. Bumm states that it is his belief that 30 per cent. of gonorrheaics are sterile. Sanger believes that the abortive influence of gonorrhea is as pronounced as syphilis and that the large majority are inevitable abortions.

Gonorrheal salpingitis predisposes to extra-uterine pregnancy.

One case of puerperal sepsis in every seven is due to gonorrhea (Findlay).

The risks to the offspring, while not so serious as regards life, are very great as regards vision, and as Morrow puts it "a veritable baptism of virulence causing from ten to thirty per cent. of the blindness in the world."

While the immediate death rate from gonorrhea is small the number of major operations performed for sequelæ, the number of abortions caused by it and the untold number of sterile and one child sterility marriages due to it makes the mortality enormous. J. Taber Johnson writes:—"There is little doubt in my mind that, at a conservative estimate, one half million prostitutes are living in houses of ill-fame in our large cities, and I am not sure a million would not be nearer correct; writers on this subject generally estimate as many living lives of easy virtue outside houses of ill-fame. In our country alone we have one and one half million who have, or are liable to have, gonorrhea with all the possible consequences."

The same author further states that it is his belief that gonorrhea is responsible directly and indirectly for as many deaths as tuberculosis, typhoid fever and pneumonia combined.

With such facts—not as possibilities but almost certainties—in our own practice is it not our duty to look things squarely in the face and do our best honestly to try and lessen the suffering and mortality from the disease in our own community?

The remedy lies in the prevention of infection of the young male and after he has become infected to make an absolute cure before we pronounce him fit to marry that should be the test when we can tell a man who has had gonorrhea that he is cured of it.

It is through the uncured man that innocent women are made pitiful wrecks a few months after marriage. They bear one child and then develop an ascending gonorrheal infection which may make them invalids for the balance of time or until they are relieved of all possi-

ble chance of future motherhood by salpingectomy.

This is what may befall the daughter of any man and the young husband can in all honesty often point his finger at us and say "You told me a lie—You said I was cured."

The prevention of infection of the male I do not feel capable of discussing it at any length but I always make it a point to tell every young man with whom I come in contact professionally of the risk he runs. Every prostitute has gonorrhea and he is sure to get it.

The sequelæ in the anterior urethra are best treated by the passage of cold sounds followed by irrigation with some mild antiseptic solution, such as oxycyanate mercury 1:4000, silver nitrate 1:10-20,000 or bichloride mercury 1 to 50,000. This repeated twice a week will with few exceptions effect a cure.

The deeper troubles of the prostate, vesicles, deep urethra, etc., are best treated by dilatation and irrigation of the urethra and massage of the prostate and vesicles. Local deep applications of silver nitrate are often necessary. Every massage or dilatation should be followed by irrigation, for the secretions expressed may possibly set up an acute gonorrhea or epididymitis.

This line of treatment has to be persisted in for months. I have one case that I have been treating off and on for fifteen months and I believe he is cured now.

In women we have a very much more difficult diagnosis to make, for the material for microscopal examination is much harder to obtain. Often the results are negative for a long time as the gonococci are extracellular and very few in number. Irrigation of the urethra and bladder with half to 1 per cent. solution of protargol and tamponning the cervix and vagina with gauze soaked in the same solution after a vaginal douche will eventually perfect a cure. This tampon is left in place for 24 to 48 hours, a douche being given and the tampon repeated.

After gonorrhea has invaded the body of the uterus, tubes, etc., it belongs to the domain of gynecological surgery.

Lately I have used with nice results gonococcic vaccine in epididymitis cases and in the joint and muscular pains; also in prostates and vesicles but not with the same good results.

No man is cured of a gonorrhea so long as there is any discharge from the urethra or as long as the expressed secretion from the prostate and vesicles contain pus cells in any considerable quantity.

GASTROPTOSIS.*

By M. O. BURKE, M. D., Richmond, Va.

The stomach may be displaced in many directions—upward, downward, or to either side. In this paper we will only consider downward displacements.

It is said that the majority of women have gastroptosis while only about 5 per cent. of men show any alteration of the position of this organ. Among 2,000 patients at Stuttgart for various ailments, not connected with diseases of the stomach, it was found that displacement existed in 9.7 per cent. of the men and 75.4 per cent. of the women.

In regard to age, gastroptosis is seldom found in boys under 14. In boys from 14 to 20 years of age, 16 per cent show gastroptosis; 21 to 70 years, about 30 per cent. In girls 10 to 15 years, 20 per cent.; 16 to 20, the percentage jumps to 57; 30 to 70 years about 80 or 90 per cent.

Etiology.—The most frequent cause is restriction about the waist. Corsets and unsupported skirts are fruitful causes in women; belts and hip trousers in men. In 172 cases of gastroptosis in men, it was ascertained that 72 wore belts. In 406 men with normal stomachs only 16 used the belt, the remainder wore suspenders.

Pregnancy is a frequent cause. Here we have over-distention of the abdomen, and, after delivery, a flaccid condition of the muscles and general sagging of the viscera.

Tumors and enlargements of the spleen and liver may push the stomach down. General debility is a frequent cause; congenital hernia, chronic cough, inflammation of the pelvic organs, the appendix and peritoneum may produce gastroptosis.

Symptoms and Pathology.—Normally, the pylorus is under the right costal arch, the fundus is under the left costal arch and so fixed that it is seldom displaced, while the pylorus not being so firmly fixed is more easily pushed downward.

*Read at a meeting of South West Virginia Medical Society at Roanoke, Va., December, 1909.

When the stomach is displaced there is more or less tension on the suspensory ligaments which eventually stretch to such a degree that they cannot react. This tension produces an irritation which increases the secretion from the glands of the stomach. An excessive amount of acid causes a spasmodic contraction of the duodenum which delays the propulsion of the contents of the stomach. Next we have fermentation of the food, distention of the stomach walls, irritation of the mucous membrane followed by catarrh, dilatation of the pylorus and eventually an atonic condition, both of the glands and the muscles.

So long as there is no impairment of the muscles, the stomach empties its contents even easier than in a normal state. After years of hyper-secretion, fermentation, distention and impaired muscular contraction, the pylorus gives way and a dilated pouch is formed, thus rendering it almost impossible for the stomach to completely empty itself. This continues for a while, then the glands become inactive, the muscles relaxed and the ligaments give way. Now the patient is afraid to eat on account of the discomfort, and general emaciation follows and the stomach sinks still lower.

In most cases of gastroptosis in elderly people, the secretion of acid is absent, owing to the effects of chronic catarrhal conditions. Many cases of gastroptosis produce no symptoms. When there is impaired digestion, we have general emaciation.

One of the first symptoms is a girdle sensation around the waist. Nearly all cases are accompanied by the succussion sounds from one to two hours after meals. There is sometimes vomiting in the early stages—seldom or never in the late stages. Most frequently there is constipation. In thin people a pulsation is felt in the epigastrium. Gastroptosis is nearly always accompanied by a floating right kidney.

Diagnosis.—In very thin people we can frequently diagnose gastroptosis by the bulging of the stomach below its natural position, accompanied by a depression below the costal arches. By filling the stomach with air or water we can easily outline the lower border, but this does not diagnose prolapse. We must also find the lesser curvature lower than normal.

The principle diagnostic signs are the succussion sound at or below the umbilicus, the depression above the stomach and, by distention, outlining the upper border below the costal arches.

Treatment.—The treatment should be prophylactic. Prohibit the use of restrictions around the waist, both in men and women. Prohibit high heel shoes. Advise physical culture in early life. After labor, keep the patient in bed for a longer period; use abdominal support for several months or until the abdominal walls are strong enough to support their burden.

When gastroptosis exists there is little hope for a complete cure, but our patients can be rendered much more comfortable by taking several small meals instead of three large meals, avoiding such foods as easily ferment.

Rest in right lateral position after meals.

Suitable diet to increase bodily weight.

Abdominal support and adhesive straps.

Absolute rest in bed, hydrotherapy, massage and electricity.

Last, surgical intervention by shortening the suspensory ligaments, closing the gap that so frequently exists between the recti muscles in women who have borne children.

Report of Cases.—No. 1. Mr. C., age 32. Book-keeper and stenographer. Had measles when 7 years of age, followed by mastoiditis; was operated on three times, last operation ten years ago; still has suppuration of middle ear. Had gonorrhea seven years ago. During 1906-1907 was troubled with vertigo, nausea, vomiting and sour stomach; used stomach tube with considerable relief. June, 1908, had an attack of vertigo and fell on floor of office and was confined to his room for several weeks. July, 1908, I was called in consultation; found patient very anemic and amaciated, nervous and miserable.

Examination of stomach showed retention of food, excessive amount of acid, lower border of stomach three inches below the umbilicus, upper border one inch above; lower border of liver two inches below the ribs.

For a time patient was benefitted by rest, diet, lavage and antacids. Bowels never moved except by artificial means.

January, 1909, patient was operated on by Dr. Stuart McGuire. Found general ptosis of viscera; stomach in bottom of abdomen, and firmly bound down to cecum, though patient gave no history of attack of appendicitis. Ap-

pendix removed, adhesions broken up, patient kept in bed three or four weeks, was greatly relieved for a time, but, returning to sedentery life and imprudence in diet soon relapsed into same condition.

No. 2, Mrs. P.; age 55; mother of three children. Patient had been suffering with nervousness, emaciation and diarrhea for several years.

Examination showed heart and lungs normal. Slight ptosis of abdominal viscera, stomach below umbilicus, depression below ribs.

Gastric Examination.—Total absence of hydrochloric acid. Upper border of stomach two inches above umbilicus, lower border one inch below, semi-lunar shape. Stools showed no blood, but undigested particles of food, especially proteids.

Treatment.—Rest in bed and condurango and hydrochloric acid. Patient immediately began to improve. Whenever acid was discontinued for a week the diarrhea re-appeared.

This case showed that the stomach did not retain food and that the absence of acid was the cause of diarrhea.

No. 3, 1907, Mrs. H.; age 43. Had slow fever when 15 years old; no other illness until five years ago. Had cramps in stomach at no particular time, but worse after meals. Had uterine trouble about the same time and had the neck of the uterus amputated and lacerations repaired. Nine months later had right kidney anchored, gained about forty pounds soon after operation, but continued to suffer with stomach and constipation. She has been worse during the past year, having lost twenty-two pounds.

Examination showed no organic trouble, except of stomach. Depression below ribs semi-lunar bulging in region of umbilicus.

Gastric examination showed absence of hydrochloric acid, retention of food. Upper border of stomach about one inch above umbilicus, lower border two or three inches below.

Treatment.—Lavage, massage and tonics with hydrochloric acid gave some relief. Strapping the abdomen gave very great relief. By persistent treatment with tonics and acid, rest in right recumbent position for forty minutes after meals and supporting her stomach the patient is fairly comfortable and has gained considerable weight.

HOME TREATMENT OF EPILEPSY AS COMPARED WITH INSTITUTIONAL TREATMENT.*

By MATTHEW WOODS, M. D., Philadelphia, Pa.

Member of National Society for the Study of Epilepsy and the Care and Management of Epileptics and of the Philadelphia Psychiatric Society, etc.

There never was a time when medical institutions were more needed, more apprepciated, better managed, and more splendidly equipped both with devoted men and liberal means than to-day. They stand like beacon lights on the pitiless shores of necessity, attracting not only the poor and needy, not only those who need help, but those who can, and do, help.

Governments vie with individuals in pouring out their wealth, like fructifying rains on an arid land, for the benefit of the helpless and poor. It has been said of corporations and syndicates that they have no souls, but these institutional expressions of the directing head and sympathetic heart make ample compensation for much that is communistically and socially defective in our every-day life—turning what was formerly wild abstraction into beneficial reality, making the last days of the desolate, abandoned, partially disabled, or mentally sick, calm, contented and serene.

In the great army of the epileptic, for example—the specifically sick—there are many who, because of being dangerous or helplessly incapacitated, find in the colony or great institution the only place where their every need can be attended to, their every want supplied. But there is a far greater number of these sufferers—they come under the observation of every physician—the milder, uncomplicated cases, with the possibility of cure, and capacity to make a living, but needing the guiding hand, who, though handicapped as only the epileptic are, require, instead of the promiscuous charity of the individual or of the State, the opportunity, rather, to support themselves, under the more intimate surveillance of the home, or the small home-like sanitarium, with but few inmates, and, if thought best, the privilege of employment outside. Congenial work, under safe conditions, is an important factor in the production of cure—or the quieter auspices of the home—their own home, or that of some one else.

This is their natural habitat, the place where they belong, and they cannot be confined with

*Read before the session of the Pennsylvania State Medical Association, held at Phelaelphia September 23, 1909.

the mixed life of the great institution with its atmosphere, often of depression, without injury.

We believe in the colony and the epileptic farm for the care, comfort, betterment and protection of cases that are past hope, where such may be kept away from temptation and the possibility of harm, under the pleasantest circumstances, until released,—sometimes even there by recovery, but mostly by death; but we are equally convinced that the line of demarkation between these and prospectively curable cases, must be very distinct.

There should be no communication—visible or invisible—between these two classes. The low grade and perhaps depraved epileptics, with their obtunded or exaggerated sensibilities, are not hurt by the proximity of the refined and intelligent, but the latter are sometimes irrevocably harmed by being with them.

Between these two classes, we repeat, there should be no fellowship; they should never, when possible, be under the same roof—scarcely under the same institutional control.

The isolation implied by classification in cottages within the same grounds or on the same property is not sufficient. There should absolutely be no possibility of their consorting together or seeing each other, for the impressions that the sights and circumstances of the large epileptic colony, with its hundreds of variously affected inmates, make upon the delicate, overwrought imaginations of sensitive patients, are more conducive to the creation of horror than the production of cure.

Who has not known of patients who, under treatment, have gone for months without convulsions or other epileptic manifestations until, having seen another person in seizure, when there is a relapse to the former estate? Who has not seen in large colonies of epileptics, when one has an attack, that many of the others are similarly affected, like a house of cards, or a row of books—one falling causing the fall of others? For there seems, in spite of apparent indifference, to be an invisible bond of union between these patients, causing them to react on each other to their mutual detriment.

Who, being known to have large experience in private practice with such patients, has not received communications from intelligent inmates of large institutions, like appeals from the abode of the lost, begging for release, to save them from going mad?

The time is almost passed when epileptics, feeble-minded, idiots and insane, can be confined under the same roof without regret or protest. The time is approaching when the various varieties of epileptics will be more practically differentiated and treated in widely separate retreats.

We can imagine no place less adapted for the treatment of the prospectively curable, or the sensitive patient, shrinking from having his malady known, or seeing others similarly afflicted, than the large institution or colony, with its hundreds of promiscuous inmates, presenting every variety of morbidity, of gait, attitude, facial expression, or lack of expression, vacant, furtive, beastial, morose, the unconquerably sad, the hilariously gay—every face a tragedy—telling a different story of lack and distress. Then the perversions or moral obliquities that cannot always be prevented or concealed, among large numbers of nervously diseased people—many with perverted instincts, and weakened wills—make a *tout ensemble* of badly assorted horrors. Surely, nothing can be worse for others nervously sick than being in the same community with such as these.

From morning till night, and through the night, instead of voice of friend or pleasant sound of home, the epileptic cry or other startling concomitant piercing you to the soul; the ever recurring convulsion felt through the centuries conveyed from the patient to the very structure of the house; the awful thud as he tumbles out of bed to the floor; the hurried gliding to and fro, like animals imprisoned in a locked cage; the subdued voices of the attendants; the stertorous breathing of the patient; then another cry, with another series of blood-curdling sequelæ surely cannot be conducive to recovery. Some colonies record thousands of fits a year—some persons, as you know, having at times dozens a day—until the milder cases in such an atmosphere become either stolidly indifferent, their recuperative hopefulness or gaiety gone, or in desperation, it would seem, giving themselves up to its abnormal life, they become a prey to despair.

On account of the effect that this knowledge and observation of the hourly happenings in the big institutions have on the more sensitive inmates, we have known mild cases to increase their attacks tenfold on entering such places intended for their relief.

The frequent sights and bizarre happenings of the big retreats, never ending, make an environment as bad as can be imagined; and, as if this was not enough, as we have intimated, the ever recurring and ever visible fit in the workshop, the play-ground, the dormitory, the refectory, the open field—at work, at play, asleep, awake—continue until you might think the whole world an exaggerated epileptic colony, and that you—your sane self—must yield to the atmosphere of depression and go deranged.

Not only the sights, but the sounds, disturb the inmates in their sleep—it may be some open-eyed but sightless somnambulist, or victim of trans-like automatism, stalking through the dormitory like a spectre of the night, rousing the drowsy attendant as he glides past like a ghost; or, it may be the husky oice of some dazed and deluded cretin, with face like a mask, making the night hideous—startling them with screams of "murder" and virtually saying, "Sleep no more," to all the house.

Surely, this is not the best place for the restoration of mild cases of epilepsy. This, it would seem, is why physicians attending such patients in their homes, without the interruption of suitable work or normal associations, and the medical managers of small, home-like sanitaria, where patients may be employed outside, if necessary, produce better results than the great institutions with their superior equipments and sometimes better men. The atmosphere of gloom inseparable from such institutions like some horrible incubus pressing upon the despairing imagination of the troubled inmates, retards improvement and interrupts cure.

In order to secure better conditions for the cure and management of epilepsy till the disease is eliminated from life, as we hope it may be, we make the following suggestion that a Free Epileptic Dispensary for the Poor and a Free Industrial Bureau for the Securing of Suitable Employment for Epileptics, should be established in every city, and where the community might be instructed how to prevent, manage and avoid epilepsy, this as a connecting link, a clearing-house, between the colony, the great institution, the small, home-like sanitarium, and the home, so that each patient might be assigned to the place where he could receive most benefit. Then the great institutions would have no inmates who could be better taken care of at home; homes able to manage their own epileptics would be taught how to avoid imposing on the generosity of the State. The community would thus be relieved of the error of assigning patients to wrong places, and the risk of having dangerous epileptics at large, and the milder cases, under better adapted auspices would attain a maximum of cure.

At the conclusion of this paper—Home as Contrasted with Institutional Treatment of Epilepsy—Dr. Woods presented thirteen patients cured of epilepsy, selected from his cures in Philadelphia alone.

The patients introduced had gone from eighteen years to three years and a half, respectively without convulsions, after suspension of treatment. Their ages varied from 45 years to 13 years, and the number of convulsions they had had previous to treatment, varied from six to twenty attacks monthly. In addition to tonic and clonic spasms—grand mal—two of these had had numerous psychic attacks—petit mal—and one had had epileptic automatism before the attacks, continuing, sometimes, as long as three hours at a time.

One of the cases presented had been in two institutions without benefit, another had been in the hand of three surgeons for three distinct operations without the slightest improvement. Spinal accessory had been cut in one case without benefit; the same patient afterwards, under the theory that the convulsions were due to intestinal irritation, had an appendicostomy with artificial anus. Through the fistula thus made, daily for a year, a gallon of sterilized water was poured, irrigating the intestinal tract below the apendix, without either benefit or apparent hurt.

The patients exhibited looked well, were well nourished, had no anemia, no acneous eruption, no nervousness; they remained in the room, sitting together, the entire afternoon, looking as if they enjoyed the proceedings. They had gone for three years and a half to eighteen years without epileptic treatment and without convulsions or any other sign of epilepsy.

1307 *S. Broad Street.*

EXCISION OF THE COCCYX FOR FRACTURE AND NECROSIS.*

By EDWARD N. LIELL, M. D., Jacksonville, Fla.
Formerly Lecturer in Gynecology, New York Polyclinic.

The subject of fracture and necrosis of the coccyx is seldom referred to, or discussed, at medical meetings, which is my excuse for its being entertained here.

My personal experience covers the care of five cases operated upon:—two for simple fracture, and three with added necrosis, a sinus having existed for a variable period in each case. The seat of fracture in four cases was at the second coccygeal joint; while in the fifth case it was at the end joint.

For a moment regarding the gross anatomy of the coccyx:—Practically one bone, it is composed usually of four segments—the first three having a rudimentary body, and articular and transverse processes as well; the latter being for the attachments of ligaments and muscles. It is destitute of both spinal canal and spinous processes. Transverse grooves on both the anterior and posterior surfaces indicate the point of junction of the bodies. The surface of the bone is concave anteriorly, convex posteriorly. Regarding its attachments, we have the sacrosciatic ligaments on each side: the coccygeus muscles in front of, and the gluteus maximus muscles behind the ligaments. To the apex of the coccyx we have both the levator and sphincter ani muscles. Its arterial supply is from the coccygeal, a branch of the sciatic—its nerve supply being from the fifth sacral and coccygeal.

As to the *etiology of fracture*:—Not infrequently it is the result of parturition, because of the greater curvature of the bone, and the greater mobility of the muscles of the pelvic floor in women. It is more frequently the result of external violence, as a kick, a blow, or a fall upon the end of the bone. As a result of injury, necrosis at the seat of fracture not infrequently results.

Regarding the cause of fracture in the five cases operated upon by me—all being females, two were undoubtedly the result of parturition; one due to having a chair pulled from under her while in the act of sitting; another, a young girl, through a swinging door striking her over the end of the coccyx while stooping over; a fifth, was evidently the result of an injury when a child.

As to *diagnosis*:—Our attention is first called to pain and tenderness in the region of the coccyx, agravated in attempts to flex or elevate the body, upon sitting, or in the act of defecation. The pain, frequently obstinate, and either dull or sharp in character, is due not only to a contraction of the gluteus maximus, coccygeus, levator and sphincter ani muscles, but frequently to that of inflammation of both the soft and bony tissues.

On physical examination, externally as well as by the index finger in the rectum, pain and tenderness are each increased. There will be detected also more or less angular projection at the seat of fracture, with mobility usually of the fractured portion of bone. The latter may be displaced forward or backward. If forward, as by direct violence, it impinges to some degree upon the rectum; if backward, parturition is its usual cause.

Not infrequently, necrosis of bone is the outcome of fracture of the coccyx—such necrosis being attended with a sinus or fistula, usually externally.

Regarding *treatment*:—This can be satisfactorily attained only by excision of the fractured portion of the coccyx—preferably by disarticulation at the seat of fracture. The patient having been placed in the Sims' position, a longitudal incision is made along the length of the coccyx, the incision being carried through the fibrous covering. The limits of the bone are determined by the finger as a guide in the rectum. Following a partial denudation of the fractured portion of bone, the latter is then separated by a scalpel or sharp-pointed scissors, care being taken not to wound the rectum. Traction being then made with bullet-forceps upon the partly removed bone, the latter is freed from its muscular and ligamentous attachments.

If the condition be one of necrosis, the distal end of the fixed portion of the coccyx should be thoroughly curetted or rasped to a healthy surface. If a simple fracture merely exists, the wound may be closed with sutures, admitting a catgut drain in the lower angle. The presence of necrosis or a sinus necessitates an open method of treatment, with iodoform gauze dressings.

*Read at meeting of Southern Medical Association, recently held in New Orleans, La.

THE SYMPTOMS AND DIAGNOSIS OF TYPHOID FEVER.*

By ALLEN J. BLACK, M. D., Roanoke, Va.

For many years the writer has been impressed by the seeming padding of medical textbooks with a profusion of so-called symptoms of typhoid fever, which for the most part, are but complications of varying intensity and results arising from the susceptibility of the individual organs to the toxic materials elaborated in the course of any acute infectious disease.

It has grown to be a fad with modern medical authors to dilate upon the subject of typhoid fever, and prolixity of description is a consequent error; hence under the heading of symptoms we find nearly every sypmtom known to disease enumerated, and worse still, they may or may not be present.

The characteristic typhoid tongue has been re-echoed by every writer for generations, and so much stress has been laid upon it that one might believe it only necessary to carry a mental picture of such a tongue in order to make a positive diagnosis.

Recently an observing medical friend asked at a meeting of our local medical society how many were familiar with the pea-soup stool so religiously adhered to in the textbooks. One member only had the temerity to believe he had seen it in some instances.

A writer says: "The tongue is somewhat coated, and very early its edges become clean and red, while the central coating remains. This appearance of the tongue is *very characteristic,* even in the mild cases." I am certain that this tongue has been seen by every one here far more frequently in cases that were not typhoid.

Again: "Although diarrhea was correctly considered at one time to be one of the most constant symptoms of enteric fever it is now absent in more than half the cases during the whole course of the disease, and splenic enlargement in many instances is too slight to be discovered; so that it is to be borne in mind that while these two symptoms possess a positive diagnostic value when present, their absence in no way contradict the diagnosis of typhoid fever." In the light of modern knowledge, when the scientific world demands *facts*—not conjectures—who could make a positive diagnosis of typhoid fever from such symptoms in the face of such affirmations and contradictions?

Another writer says: "The disease may be ushered in by pain in the back or legs and muscles and nose-bleed. The last has always been considered characteristic, and yet I meet it less frequently than might be expected from textbook statements. More common is looseness of the bowels. All this time there is a slight fever and the patient feels wretched. The fever and the discomfort increase and finally the patient goes to bed. The tendency to looseness of the bowels and epistaxis, more than any other symptoms of this group, justify strong suspicion of the existence of typhoid fever." *Yet one or both are often absent.*

To-day the only positive diagnosis of typhoid fever which can be made is that which demonstrates the presence of the bacilli in the blood, urine or stools.

It is known that colon bacillus infection may produce a clinical picture identical with typhoid fever. More recently it has been clearly proven that the short duration cases of continued fever, which we have been accustomed to call simple continued, are, many of them, typhoid.

The Widal reaction, with its 5 per cent. of negative results leaves just this small loop-hole for doubt in the diagnosis, but it should be sought in every suspected case; and since our State Board of Health has made provision for this test to be made free of cost for any physician in the State, nothing but gross negligence should prevent a physician from seeking this valuable aid.

The differential diagnosis must cover an extensive ground. Miliary tuberculosis, pulmonary or abdominal, in its early stages can confuse. Acute inflammatory conditions of the heart, brain, kidneys, lungs, pancreas, acute septic processes, influenza with prominent abdominal symptoms, malarial infection are all to be excluded, and this can only be accomplished by a careful and painstaking examination, and in a great many instances a definite conclusion cannot be arrived at for many days.

Correction of errors of refraction and removal of the appendix have failed in many instances to cure the typhoid fever which existed as the sole cause of the patient's indisposition.

*Read before the Southwestern Virginia Medical Society, held at Roanoke, Va., December 2, 1909.

Likewise has specific medication for typhoid fever failed to cure mastoid disease and to remove pleural effusions and pus accumulations.

Errors in diagnosis will creep into our work despite our every effort, and there is no disease about which the regular physician doing general medical work feels he is more competent to manage and do it better than any one else.

In the early days of my work I found no difficulty in diagnosing typhoid fever within a few minutes after seeing my patient, and if the patient was well and back at work in a few days it was easy enough to attribute this happy result to my superlative skill as a typhoid exterminator. Increasing experience has brought with it a conception of the limitation of my ability and a few negative Widal findings in some of my cases have convinced me that I can be mistaken by what are termed the clinical symptoms of the disease.

The diagnosis of typhoid is strongly suggested when we find a patient showing an elevated temperature which persists from day to day and for which we can discover no other reason. Of course, it is understood that a most careful examination of the patient has been made and every condition excluded which might simulate typhoid. The daily course of the temperature varies widely, as we all know, though by far the larger number of cases will show a higher evening elevation. Competent observers say that there may be a subnormal temperature throughout the disease. I do not believe it possible to make a diagnosis under such a condition without a bacteriological examination of the blood being made.

Rose spots and splenic enlargement occurring within the first eight or ten days are important as group symptoms. The rose spots occur in about two-thirds of all cases. Ordinarily, the recognition of the rose spot should occasion no difficulty, but they have frequently been reported as having been present in cases which were found not to have been typhoid—where gross diagnostic errors had been committed—and it is evident the true appearance of the rose spot is not as well understood by a great many physicians as it should be. Splenic enlargement is easily recognized by palpation in many cases, but where the increase in size is slight its recognition is most difficult—in fact, in most instances, impossible. Percussion of the spleen, unless very greatly enlarged, practically sufficient to render its easy palpation possible, is most unsatisfactory, and gives very uncertain information. The frequency of gaseous distension of the intestines in typhoid adds materially to the difficulty.

Headache, backache, thirst, restlessness, mental hebetude and the thousand and one symptoms which are given under this heading in the textbooks are no more significant of typhoid than of any other acute infectious state. We do not look for them; our patients tell us of them and their presence is natural.

The foregoing symptom group, with all other diseases eliminated, continuing for a week or ten days, justifies a clinical diagnosis of typhoid. Confirmation of the diagnosis is obtained by a positive diazo-reaction in addition to a positive Widal. Recovery of the bacillus from the blood, urine or stools makes the diagnosis positive. The diazo-reaction is easy of employment and can be used by any physician. Special appliances are essential for the application of the Widal test and few phvsicians are prepared to make it, but the State Hygienic Laboratory makes it free of cost and renders prompt reports, and every physician should avail himself of this valuable aid.

Typhoid fever occurs in many varying degrees of severity. The diagnosis of the disease, while comparatively easy in a great many instances, generally requires careful observation and examination for several days before the physician can give a reasonably certain opinion as to its existence. I would urge upon the members of this society the necessity for withholding the final statement as to the nature of the patient's ailment until the diagnosis is complete. Do not tell a patient he is *threatened* with typhoid fever; say you suspect it, and if the progress of the case ends in recovery in a few days don't claim that you broke it up. The time is long since passed when it should have been the duty of our profession to eliminate this false claim from the category of medical humbuggery.

Dr. E. T. Brady, Abingdon, Va.,

President of the Medical Society of Virginia, recently reported in the newspapers as seriously ill, we are glad to note is rapidly improving, and hopes to be at his post of duty in a short while.

RHEUMATISM—ITS TREATMENT.*

By WILLIAM F. WAUGH,. A. M. M D., Chicago, Ill.
Dean and Professor of Therapeutics, Bennett Medical College, Chicago.

Our conception of this malady will be simplified if we define it as a disease of the fibrous structures about the joints, characterized by inflammation, gastro-intestinal disorder and acidity. This excludes myalgia and other maladies, often designated as rheumatism for no better reason than like it, they are painful. Rheumatism attacks by preference the larger joints first, and as the primary attack subsides it is apt to appear in another joint, thus passing in succession to few or many. It is more distressing and the inflammation runs higher in first attacks and in younger patients. It tends to induce inflammation of the endocardium and pericardium, and this may occur simultaneously with the arthritic malady, or may not be detected for years, when structural alterations have occurred about the cardiac valves. Mild attacks are thought to be more apt to be followed by cardiac lesions than those more acute—probably because the former are neglected and the circulation of irrritant toxins goes on unopposed. Fermentation and acidity in the stomach and duodenum are perhaps constant concomitants. Tonsillar inflammations frequently precede the outbreak of rheumatism, and chorea is associated with it too often to be accidental.

Fuller's alkaline treatment was based on the theory that rheumatism was due to the development of an acid which acted on the affected tissues. It consisted in the administration of an ounce of sodium carbonate—this being less irritant to the stomach in large doses than the bicarbonate—in three pints or more of water each twenty-four hours till the urine was alkaline and the force of the attack was broken. Statistics showed this to be more effective in preventing heart lesions than any other treatment, even the salicylate, and I know of no later demonstration of the incorrectness of this claim. Nevertheless, we never hear of the alkaline method now, it having been superseded by the use of salicyl derivatives.

The use of these commenced with oil of wintergreen, which enjoyed much favor with the laity. Taken in doses up to the limit of toleration it was promptly effective; but toleration was soon reached and the stomach rebelled against the oil. Investigation showed that this was chemically methyl salicylate, and from it salicylic acid was obtained. This was welcomed, and soon displayed its extraordinary powers. My first application of this acid was characteristic. I had been treating a man with rheumatism—acute and excessively painful—for nearly a week, and things had reached the point where he flatly told me I could have one more day to give relief and then he would call another doctor. It was a "ground-hog case." Search through text-books failed to reveal any definite promise, but in a medical journal I found the salicylic acid suggestion. I mixed two drachms of the acid in a pitcher of water, adding borate of soda until effervescence ceased, and ordered this to be taken in six doses, two hours apart. The man was in bed, suffering frightfully, scarcely able to move, with high fever, and on my visit next morning I looked anxiously to see if crape hung on the door. No—and I entered, to find my erstwhile dying patient sitting in a chair before the fire, smoking his pipe and reading the paper.

The same characteristics that have made the alkaloids first in the affections of those who use them, placed salicylic acid in the front as an anti-rheumatic—the sure and quick relief it gives. The choice lies between the various salicyl derivatives—the acid, its salts, salol, salophen, salipyrin, aspirin, etc.

When cascara sagrada was first introduced it was claimed to have a specific virtue in rheumatism; but this claim was later withdrawn, it being found that its value was that of cathartics in general. The books used to say that these agents did not give enough relief to compensate for the distress due to the motion their activity compelled; but my own experience convinced me that this was not true, and that the relief was well purchased thereby.

Three facts may be correlated here—the relief obtained by catharsis, the gastro-intestinal antiseptic character of all the modern remedies for this malady, and the presence of gastro-intestinal fermentation in it. Salicyl in all forms, resorcin, quinine, all are antiferments; and soda neutralizes the products of this process. Assume that rheumatism is due to an acid toxin generated in the stomach and bowels, by a microbic agent, and how may we best meet this condition? Salicylic acid is a

*Lecture delivered at Bennett Medical College, Dec. 3, 1909.

NOTE BY EDITOR.--The Bennett Medical College has come over to "regular medicine."

useful and non-toxic antiferment, and as long as there is even a trace of it in the tract there will be no fermentation. But even a maximum dose disappears from the stomach in a short time, and then the ferment recommences its operations.

Acting on this hypothesis I gave my rheumatic patients true salicylic acid in doses of a centigram every ten minutes, thus keeping a trace of the antiferment constantly present in the stomach. With this was conjoined the basal treatment of febrile diseases, keeping the bowels clear and aseptic by saline laxatives and enough sodium sulphocarbolate to remove all abnormal odor from the stools. Up to the present the results are confirmatory of the basis on which the treatment is founded. Many practitioners who have tried it have reported successes, and no failures have as yet come to me. With a few grains of the acid a day, better results have been realized than from many times more, as given in a few bulky and infrequent doses.

Salicylic acid should be administered in chemical purity. In one of his earlier works Hare collected a large number of cases of poisoning from this salicyl group. In one case a dose of 15 grains induced alarming symptoms, while in another 960 grains were taken without a fatal ending. This indicated a wide difference in the quality of the drug, the small toxic dose containing toxic impurities to which the bad effects are attributable. These are present in the impure commercial specimens of this preparation and not in the acid derived from oil of wintergreen. However, there is a pure synthetic acid to be had, blue-white in color, and this is fully equal to the natural product.

In dealing with subacute and chronic forms of rheumatism, we have the results of the malady as well as the continuance of the original morbid process before us. This is why we get from the iodides a beneficial action that is more pronounced the more the case verges toward the chronic condition—this powerful absorbent stimulating the breaking up and carrying away of the debris of the malady. This may be materially aided by the vegetable alteratives or absorbents, such as phytolaccin, and rhus tox. Macrotin is of especial value when chorea complicates, and has never given me any satisfaction in the early acute forms.

More attention should be paid to the tonsillar affections. Several times when dealing with rheumatics it has been my good fortunte to note an acute inflammation in the throat, and after prompt treatment of it no rheumatism followed. For this purpose the chlorine water of the U. S. P. is a useful remedy, if freshly prepared. A teaspoonful may be taken undiluted and repeated every hour until the microbic colony on the mucous surface has been destroyed and the inflammation has been jugulated. Any of the germs that may have been swallowed are likewise destroyed; and the physician who makes use of this remedy sufficiently early will get a new idea as to the possibility of jugulation and how to accomplish it.

4754 *E. Ravenwood Park.*

EXPERIENCE WITH PUERPERAL ECLAMPSIA.*

By J. H. HIDEN, M. D., Pungoteague, Va.

In presenting this subject it is my purpose simply to review certain phases and to emphasize the value of certain medical facts, as they appear to me, in the management of such cases.

When called to case of puerperal convulsions we have no time for meditative work; the time for action has come. The physician should be cool, ready and decided in his views. The general condition and symptoms of the patient suffice to suggest an appropriate modification of any preconceived or favored plan of treatment. Thomas Macaulay, in his brilliant essay upon Sir James McIntosh, calls attention to the fact that it was seldom to get an opinion from Sir James in its formative state. The opinion was almost invariably ready, based upon carefully selected evidence, and formed in the most accurate, elegant language. In other words, he had his knowledge and opinions at his command. It is hardly requiring too much to expect of modern physicians at least an approximate degree of such proficiency.

The most constant and predominating factor in the etiology of puerperal eclampsia is renal insufficiency. The primary cause in most cases, then, may be considered some form of toxæmia. In some cases this toxæmia may be more or less of hepatic origin, as often shown in autopsies in which fatty, cellular degenera-

*Read before the Seaboard Medical Association, held at Norfolk, Va., December 8, 1909.

tion, capillary hemorrhages, infarcts, etc., have been observed. The convulsions are only symptoms of a grave condition. In other words, there are various forms and degrees of puerperal toxæmia, which may, or may not, produce convulsions, according to the conditions in each given case. I confine myself, however, in this paper to only such cases as produce convulsions.

Until about five years ago I practiced venesection in puerperal eclampsia as the great "life-saving agent." And though yet a believer in its value in properly selected subjects, I have omitted it entirely in my last nine cases. In these nine cases I had a mortality of nothing. Several of these were of the mild type, yet the majority of them could not be properly so classed. Five were in persistent coma from eighteen to thirty-six hours, either during the interval of convulsions or following them. Four out of the nine were operative cases under complete anesthesia. In two of these four a high forceps delivery was required. In one of these, before delivery was accomplished, convulsions persisted even when the pulse had been reduced to fifty beats to the minute. Here, I am aware, that many physicians would have adopted venesection; but as the patient was so anæmic I decided to omit it.

One case of special interest was a mere child—a mulatto girl, aged 12 years, 3 months and 23 days. When first seen, only a few hours before delivery, her condition was exceedingly grave. Her face, limbs and other portions of her body were enormously swollen and œdematous. The labiæ majoræ were distended to the size of two large cocoanuts. Rapid labor set in about midnight, and before my services could be secured, the child was still-born and the little mother had seventeen convulsions. After my arrival she had two more, followed by profound coma for thirty-six hours. The hot, wet pack was added to the general treatment with excellent results. During convalescense urinalysis revealed albuminuria, and the microscope showed large quantities of epithelial cells and a considerable number of epithelial casts, the case being evidently an acute parenchymatous nephritis.

Two of the nine cases, both primiparæ, developed convulsions about *six weeks ahead of term*, the convulsions being, from all appearances, entirely due to the toxicity of their blood. As these cases where characterized with symptoms of the fulminating type, and preceded the process of labor, they were treated by mechanical dilatation of the uterine cervix and delivery by forceps.

Now a word about treatment: I follow no stereotyped rule. The treatment may be briefly put as follows: (a) Control the convulsions; (b) empty the uterus whenever symptoms demand it; (c) assist nature in the process of elimination.

For the control of convulsions I have relied principally upon morphine and veratrum. These are given together, hypodermically, for the first dose; morphine, one-fourth of a grain; tincture of veratrum, ten drops. If this does not materially reduce the pulse rate within a short time, say, thirty minutes, a second dose of half the quantity of each is given. If any more veratrum is required, it is given by mouth. As soon as the pulse rate is reduced to about sixty beats to the minute, a mixture (containing chloral hydrate, bromide of potash and tincture of veratrum) is prepared to be given at stated intervals, say, every two hours, in sufficient doses to keep the pulse rate within safe bounds and to furnish to motor areas a nerve sedative.

In cases in which the uterus should be emptied it is safer to omit the use of veratrum during the administration of the anesthetic. Under the head of these operative cases I wish to refer to only those in which convulsions are ushered in ahead of term and in the absence of labor. In these cases I much prefer operative measures to the expectant treatment. The mechanical dilatation of the uterine cervix under complete anesthesia and under the strictest aseptic precautions, is not so serious an operation as often supposed. Moreover, when this can be performed, and the fetus removed without accident, the greater part of the battle is won.

When dilating the uterine cervix, do it, when possible, by manual efforts. When the fingers are introduced into the cervical os avoid rapid, violent pressure upon the uterine circular fibres; alternate such pressure with the cautious stretching of the longitudinal fibres by the process of traction. This, I have found from experience facilitates the operation. It also simulates the dilatation of normal labor and, consequently, avoids, in a measure, the danger

of serious cervical lacerations. In both of my cases, above referred to, this method of dilatation was adopted with the most gratifying results.

Now, a word about elimination.—In general terms, diuretics, cathartics, and diaphoretics should be more or less employed. The kind, quantity and frequency in the administration of each should be regulated to suit the conditions in each given case. Among the diuretics the subcutaneous injections of normal salt solutions are not only helpful in renal congestion, but doubly indicated following hemorrhage or venesection.

Under the head of diaphoretics, the one which has given me most satisfaction is the hot-wet pack. Elimination by this method was repeatedly used in my worst cases with excellent results.

In conclusion: If eclampsia is really the outcome of a toxæmia, then elimination is the logical course to favor. Any factor which materially interferes with the processes of elimination should be handled with caution. What have we gained by controlling convulsions if our patient is to die in uræmic coma? From my own experience I am led to believe that the main factor which, in the past, has been conducive to the high mortality of puerperal eclampsia is the tendency to rely too much upon some favored heroic measure for controlling convulsions. By considering eclampsia in the light of a toxæmia, and judiciously selecting and combining the varied resources at our command, it is to be hoped that this dreaded malady may yet be lowered in its mortality.

PUERPERAL SAPREMIA AND SEPSIS—THEIR TREATMENT.

By JOHN EGERTON CANNADAY, M. D., Charleston, West Virginia.

The treatment of puerperal sapremia may be said to have been pretty definitely settled. The accepted treatment is neither experimental nor is it based on theoretical deductions, our knowledge of the subject strongly indicating the removal of all decomposing material from the uterine cavity. When there is an offensive discharge from the os uteri, and other indications of retained and decaying material, a digital exploration of the interior of the uterus should be made and the offending material removed. Failing to detach it with the finger or appropriate forceps, such as a sponge holding forceps when the os is wide enough for its easy admission, a dull curette should be used, gently manipulating the same so as not to incur risk of perforating the uterine wall.

An offensive discharge, associated with bleeding, often urgently calls for the use of the sharp curette. A large bladed instrument entails less danger to the patient, and with it one can do more thorough work. The use of the sound or small curette is dangerous, especially for those who are lacking in large experience in this line of work. At the time of curettage I irrigate the uterus freely with salt solution through the rinsing curette, having a very moderate elevation only of the irrigator, so as to avoid risk of forcing fluid into the abdominal cavity by the tubal route. Only occasionally a few douches are given afterward. Some take an extreme view, and object to the use of the curette in any form of uterine infection, claiming that it disseminates infection. In a large series of cases I have irrigated and curetted with the happiest results. Rest in bed, nutritious diet, and stimulation, if needed, form an important part of the after treatment.

Treatment of Puerperal Sepsis.—The treatment of this condition as yet is undetermined and unsatisfactory. There are few diseases in which the treatment is so far from ideal. Several more or less ineffective lines of treatment each have their champions. The yeasts, the nucleins, the serums, and, more recently, the opsonins, have been lauded more or less extravagantly. In one or several of these lines evidently lies the hope of the future.

The non-surgical treatment is largely expectant, symptomatic, and supportive, a prime essential being intelligent and careful nursing. The application of some of the principles of physiologic therapeutics is of value here. Especial attention should be paid to the securing of the best possible condition of the assimilative as well as eliminative organs. As much appropriate nutriment as can be assimilated should be ingested. The skin must be bathed frequently, the body warmth must be kept up in such a manner as not to interfere with an abundant supply of fresh air, while plenty of pure water by the mouth and saline solution by the bowel or under the skin helps in the elimination of poison. The serious and widespread

streptococcus infection profoundly intoxicates and depresses the patient. The entire body economy is upset, and the physician must do his best to marshal the demoralized and scattered vital forces against the multitudinous ranks of the enemy. Gastric lavage and the cautious administration of cracked ice and champagne will do more to relieve vomiting than drugs. The use of medicines pure and simple is of little avail; indeed, many remedies tend more to debilitate and upset the patient than otherwise. The use of heart tonics, as nux vomica and digitalis, is important. Use must be made of all agents calculated to antagonize the general adynamia.

Injections of saline solution subcutaneously and by the rectum are of great value, especially in the beginning of the disease. From 200 c. c. to 500 c. c. should be used at a time. The circulation is thereby regulated, heart action increased, and the cerebro-spinal system and nutritive function are stimulated. Diuresis is increased promptly, but no very increased amount of toxic matter is eliminated. Improvement is usually ascribed to the dilution of toxins in the blood. The process of dilution should be kept up as long as new toxins develop.

Frequent sponge baths will keep the skin in good condition. Abnormally high temperatures should be reduced by cold sponging with water or alcohol and the application of ice bags to the scalp. If much inflammation of the lower abdomen is evidenced an ice bag should be applied above the pubes. The inhalation of oxygen will promote the oxidation processes, and the administration of stimulants will be of value at times; ergot has been recommended on the ground that it would, by causing contraction, prevent extensive infiltration of the uterine tissues by cocci. It is probably of theoretical value only. The value of the nucleins, like that of alcohol, as a medicine, has neither been established nor disproven; Crede's ointment, much used by its enthusiastic promulgator and his followers, and mercurial ointment, extensively used in German clinics, are both probably fairly good placebos. Fochier's abscess by fixation, produced by the injection of turpentine, is mentioned as a method of respectful antiquity. The intravenous injection of formalin solution had a brief but meteoric career. Aided by the medical press, too prone to seize every untried novelty, its boom was sudden; it went up like a sky-rocket and came down like a stick.

Anti-streptococcic serum has held the faith and support of the profession, made hopeful, nay, even confident, by the brilliant results of diphtheria anti-toxin; it was hard, therefore, to realize that other specific serums should not burgeon and blossom at the bidding of the laboratory wizard. The use of the various serums, Marmorek's being among the most notable, has not been encouraging. Lately, horse serum has been used as an adjuvant to surgical measures with what seemed to be some indications of success. To date the injection of serum has obtained neither curative nor immunizing effect. It is a pretty universal belief, however, that it is only a matter of time when an effective serum will be produced which can be depended on for passive immunization and treatment. While the results from the use of the serum have been on the whole encouraging, their proper use is attended with no risk. Much was expected from vaccine therapy. Sir A. E. Wright says the results in streptococcus sepsis, treated by his methods, with opsonins, have been fair, but not very encouraging.

The irrigation of the uterus with solutions of iodine and other germicides has been disappointing. Some still adhere to these irrigations. They probably do no harm, and may cleanse the uterine cavity mechanically. Other such semi-surgical measures as the packing of the uterus with ichthyol gauze still have a few half-hearted adherents, who practice the method, giving as a reason that if it does no good it does no harm. The use of the uterine curette in the treatment of puerperal sepsis has been praised by a few and decried by many. It is most likely an effective means of scattering and increasing the infection.

Pryor's method of thoroughly curetting and irrigating the uterus, packing it with iodoform gauze, opening the cul-de-sac, and making through this a fan-shaped packing of iodoform gauze, in his hands seemed to give unexcelled results. In considering this we are reminded of the old truism that human cell life is quite as susceptible to the poisonous action of chemicals as germ life, and in many instances more so. Duhrssen's suggested treatment of atmocausis for the interior of the uterus would probably have given few, if any, advantages over

curettage, or even the use of caustic substances.

The opening and drainage of localized collections of pus is, of course, done by advocates of any and all methods of surgical treatment. It gives relief of a certain kind. The toxic part of the pus is no longer absorbed under high pressure. True, one is often not at all sure but that there may be concealed collections of pus after opening everything in the way of an abscess that can be located through the vagina. Recovery at best, after opening, draining, and irrigating an abscess cavity is a tardy procedure, associated with much tedious treatment. Generally, a radical extirpation will have to be done later in order to effect a real cure. The simple incision and drainage of a pelvic abscess will at times save life. It is believed by many that vaginal drainage for acute pelvic peritonitis is beneficial. Others consider that all acute exudates in the same region should be incised and drained. All local collections of pus should be drained as soon as they can be located.

Simple single incision with drainage, and without irrigation, I think best for puerperal peritonitis. Some highly advocate multiple incisions, but their mortality statistics are not better than those of men who do less cutting. If the pelvis was the storm center, I would advocate a supplementary vaginal drain, which has the advantage of gravity, especially when associated with the exaggerated Fowler posture. Pettit, of Paris, is a warm advocate of the use of horse serum in these cases; he pours it into the adominal cavity, saturates drains with it, and introduces the dried serum on a tampon into the uterus. He says it calls out the polynuclear and increases the resistance to infection.

The incision of veins containing septic thrombi, if done early, will be productive of great good. These vessels can often be felt through the vagina as thick strands running out toward the pelvic wall, which can be approached either through the vagina or by median laparotomy. These thrombosed vessels usually lie entirely outside the uterus.

Extirpation of the uterus is of value if it is known that the infection is limited to that organ. The mild case often recovers without hysterectomy, while the infection of the severe case is very apt to be spread beyond the uterus. Removal of the infected uterus is often followed by rapid collapse and death. If the precise conditions could be determined with absolute certainty hysterectomy would be more often in order. There is much room for the exercise of good judgment in this part of the treatment. In a considerable number of cases I have followed the more conservative plan of declining hysterectomy, and have had fair results.

Book Notices.

Principles of Hygiene. By D. H. BERGEY, A. M., M. D., Assistant Professor of Bacteriology, University of Pennsylvania, etc. Illustrated. Third Edition. Thoroughly Revised and Enlarged. Philadelphia and London. W. B. Saunders Co. 1909. 8vo. 555 pages. Cloth $3 net.

This is, in many respects, a new book—such have been the advances in studies of subjects connected with hygiene—public and personal—in the past few years. Matters pertaining to the purification of sewers and sewage in cities, the discovery of the spirochæta pallida as the cause of syphilis, etc., and various questions as to immunities—how produced, etc.—are all noted. In fact, the chapter relating to immunity has been largely rewritten. In brief, this work is a practical manual for students, physicians and health officers, and for building architects. The language in general is not over-technical even for the public school teacher, or the householder.

Primer of Sanitation. By JOHN W. RITCHIE, Professor of Biology, College of William and Mary, Va. Illustrated by Karl Hassmann. Yonkers-on-Hudson. New York. World Book Co. 1909. 12mo. 200 pages. List price, 50 cents; mailing price, 60 cents.

This is said to be the first book in the English language to teach fifth or sixth grade pupils how to escape germ diseases. It has been adopted as a text-book in schools in many States. Its teachings are all such as the non-technical medical student can easily understand. If the book were adopted in all public schools, etc., it would do an immense deal of good in impressing the young mind the value of hygiene and sanitation, so as to be helpful in co-operative work in conserving public health. We would, indeed, be glad if we help to induce heads of families to read and imbibe the lessons taught. The illustrations well

serve the purpose for which they were designed.

Prevention and Treatment of Abortion. By FREDERICK J. TAUSSIG, A. B., M. D., Lecturer on Gynecology, Medical Department, Washington University, etc., St. Louis. Fifty-nine Illustrations. St. Louis. C. V. Mosby Co. 1910. Large 8vo. 180 pages. Cloth, $2.

This book, in the hands of the conscientious practitioner will prove of great value. While it treats of prevention of abortion, one of the chapters is devoted also to the prevention of conception—a thing sometimes required, but not as frequently as patients call on their doctors to tell them how. The chapters on the treatment of needed and inevitable abortion teach matters of technique that should be followed. The value of the book is enhanced by the well drawn illustrations. The book is finely printed, and a good index is appended. It will prove a popular book because of the subject dealt with, and the practical manner in which it teaches.

Editorial.

The Tri-State Medical Association of the Carolinas and Virginia

Met in their twelfth annual session at the Jefferson Hotel Auditorium, Richmond, Va., February 15-17, 1910. The President, Dr. LeGrand Guerry, of Columbia, S. C., in his address on "Some of the Things the Profession Can Do in Regard to Cancer," revived the discussion of the subject as to what the public should know of the treatment and prevention of this disease. There seems no reason why steps should not be taken to fight cancer as well as tuberculosis, typhoid fever, diphtheria, hookworm, etc., and it is believed that the interest manifested at this time will, in the near future, lead to active measures being taken to form organizations for this purpose. An unusually large number of interesting papers was presented, and many receptions and social affairs added to the enjoyment of those fortunate enough to be in attendance. It was estimated that fully 250 doctors were in attendance at some of the sessions of the association.

The following were chosen by acclamation officers for the thirteenth annual session: President, Dr. Joseph A. White, Richmond, Va.; Vice-Presidents—Drs. Joseph Graham, Durham, N. C.; T. P. Whaley, Charleston, S. C.; Samuel Lile, Lynchburg, Va.; Secretary and Treasurer, Dr. J. Howell Way, Waynesville, N. C. Executive Council—Drs. H. T. Marshall, Charlottesville, Va.; C. V. Reynolds, Asheville, N. C.; H. .E McConnell, Chester, S. C.; James S. Irvin, Danville, Va.; A. J. Crowell, Charlotte, N. C.; A. E. Baker, Charleston, S. C.; Robert C. Bryan, Richmond, Va.; H. T. Bahnson, Winston-Salem, N. C.; Rolfe E. Hughes, Laurens. S. C. The association will hold its 1911 session in Raleigh, N. C., beginning the third Wednesday in February.

The Lynchburg Medical Society

Held its regular monthly meeting on the 7th, Dr. George J. Tompkins presiding. Able papers were presented by Drs. James Morrison, H. W. Dew and George Hamner.

The first of a series of open meetings, given under the auspices of this society, was held on January 25th. At these meetings it is the purpose of the doctors to have some of their number deliver lectures with a view to educating the public in matters of public health and furnishing them some of the fundamental principles of preventive medicine.

Errata.

In our issue of the 11th, in announcing that The Medical Review of Reviews was to be edited by Dr. William J. Robinson, the mistake was made of saying the doctor was *formerly* editor of The Critic and Guide, Therapeutic Medicine and The American Journal of Urology, as he expects to retain the editorship of these journals as well.

Transactions of the Medical Society of Virginia for 1909

Are about ready for issue; so that members not receiving their copies within a few days should notify the Secretary.

Medical Society of the Missouri Valley.

Preliminary announcement has been made of the twenty-second semi-annual meeting of this society at Omaha, Neb., on March 17th and 18th, under the presidency of Dr. A. B. Somers.

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Original Communications.

ON THE CURE OF UTERINE PROLAPSE.*

By HUBERT A. ROYSTER, A. B., M. D., Raleigh, N. C.
Professor of Gynecology in the University of North Carolina; Gynecologist to Rex Hospital; Surgeon-in-Chief to St. Agnes' Hospital.

The treatment of prolapse of the uterus may be conveniently divided into preparatory, palliative and curative. The *preparatory* treatment, as the term implies is a preliminary routine for those cases which are to undergo operation. It consists in rest in bed for ten days or more, the administration of saline purges, the application of supporting tampons to the uterus, the giving of hot douches and the assumption of the knee-chest posture by the patient for an hour during each day. *Palliative* treatment means the use of appliances for holding the uterus temporarily in place, and it should be reserved for the cases in which operation is refused or contra-indicated. Of the contra-indications, pronounced organic disease is practically the only one demanding serious consideration, not even extreme old age being an absolute bar to operation.

The curative or operative treatment (upon which it is purposed in this paper to offer some observations) has for its object the permanent restoration of the fallen womb to its normal position or as nearly as possible thereto. This can be accomplished only by surgical methods. In the vast majority of cases the desired results are attained and the few failures are due to improper technique and disregard of certain fixed principles. No matter what methods are employed, they must all include thorough plastic work on the pelvic floor with or without some form of attachment above. The important question is to decide which case needs one or both of these procedures and what particular method is appropriate.

There is no subject in gynecology so little understood, I believe, as that of uterine prolapse and this is chiefly owing to the constant overlooking of the simplest fundamental ideas. It seems natural, therefore, to refer to the causes of the condition and to discuss its complications before passing upon the means which have been proposed for its cure.

It is but rehearsing what is already well-known to go over the etiology of prolapsus, but a succinct classification, stressing associated ideas, will bring out useful knowledge. The predisposing causes may be summarized as follows:

1. Relaxation of the *uterine ligaments* from too frequent parturition or tissue-weakness; 2. *A loss of tone in the abdominal walls,* diminishing the "retentive power of the abdomen;" 3. Decrease in the fat and *connective tissue* of the pelvis due to old age or wasting diseases. Analyzing these, we find that they represent just the reverse of those factors which make for the support of the uterus; for that organ is maintained within its normal limits by sound ligaments, by the "retentive power of the abdomen" and by the pelvic connective tissue. Here is strikingly shown that study of the physiological is necessary to understand the pathological. Exciting causes, which are of less importance, can be put down as stooping, straining or heavy lifting; and anything that increases the specific gravity of the uterus, such as subinvolution.

As in many other conditions, so in "falling of the womb," its chief symptomatology is derived from the complications. The descensus is always of slow development and during its progress there is time enough for the occurrence of side issues which may put the main event in the background. Cystocele, rectocele, elongation of the supra-vaginal cervix and prolapse of the vagina are the principal complica-

*Read before the Tri-State Medical Association of the Carolinas and Virginia at Richmond, Va., February 15-17, 1910.

tions. Upon these the symptoms depend, and, unless they are removed, the affection cannot be cured. Suspension of the uterus does not take up all the slack below; plastic operations will not unaided place the uterus on a higher level; and even hysterectomy alone will not get rid of a prolapsed vagina. In fact, hysterectomy as a mode of treatment for prolapse must be ruled out except as a last resort. Without the plastic operations below and the stitching of the stump to the abdominal walls, it will almost always fail to relieve the conditions present.

When we come, then, to the operative treatment of uterine prolapse, our pathway is made plain, if only we keep in mind the causes and the complications and use a certain discriminating judgment in the selection of a plan. One should always carry out the preparatory treatment whenever feasible, studying the case meanwhile, and making repeated examinations, with the patient both in the upright and in the horizontal positions. The extent of the displacement can thus be determined—whether it is only a slight descent on the one hand or a procidentia on the other. Such findings will decide the nature of the operative method.

In the very slight or recent cases it may suffice to do a curettage, with perineorrhaphy and any form of anterior colporrhaphy, trusting to these procedures to relieve the existing situation, and at least prevent any further prolapse. If in such cases or in more pronounced ones additional effect is needed, amputation of the cervix should be done for the purpose of reducing the weight of the uterus, securing better drainage and removing a probably degenerated structure. When cases of advanced prolapse are presented, those in which the uterus itself or even the cervix is protruded outside the vaginal canal, some method of holding up the womb from a point above the pelvic floor must supplement the plastic methods just mentioned. In women who are still at the active period of maternity it is best to open the abdomen and suspend the uterus preferably by the round ligaments after the Gilliam plan. For women past the child-bearing age (and the largest proportion of prolapses are seen at this period) fixation of the uterus to the anterior vaginal wall affords a means of attachment at once safe and reasonably sure.

The story of anterior vaginal fixation of the uterus is a long one, dating from the time (about 1894) when Mackenrodt and Duhrssen first proposed their methods for the treatment of retroversion. The operation never became popular, because it did not fulfill the requirements, and soon fell into disrepute. Just a few years ago, (1899-1901) several operators independently took advantage of the vaginal-fixation method in applying it to the cure of cystocele and later of uterine prolapse. Chief among these operators were Wertheim, Schauta, Stone, Watkins and Dudley. Numerous others have suggested modifications of the original methods and changes in the technique, but they all in common possess one central feature, viz.: the separation and elevation of the bladder and the interposition of the uterus in the space between the bladder and the vagina. The uterus is thereby markedly anteverted—a point of advantage, when we remember that (as claimed by many) the uterus cannot begin to prolapse until it first becomes retroverted.

Fixation is done in conjunction with the amputation of the cervix and the anterior colporrhaphy. After making the crescentic incision above the cervix, and a longitudinal division of the vaginal wall in the mid-line, the bladder is widely separated, the anterior fold of the peritoneum is opened and the fundus uteri brought down. As much of the mucous membrane of the vagina is cut away on each side as may be necessary, depending on the extent of the cystocele, and two of the sutures which close the incision are passed through the uterine wall, thus anchoring this organ firmly to the vaginal tissues and pushing up the bladder. The one great attraction of this method is that it does not require an incision through the abdominal wall; and the one great draw-back is that it is to be performed only on women whose gestation periods are over. My results with this method have been, in the main, satisfactory. In two or three cases sagging of the vagina from the weight of the uterus has caused patients to believe that the womb was still "down," while a few have not been relieved of their symptoms.

Finally, let us get this fastened in our minds:—Prolapse of the uterus is not cured by any one specific operation done in any one specific way, but by a succession of different procedures designed for the particular case in hand. When in a certain instance we do curettage,

amputation of the cervix, perineorrhaphy, anterior colporrhaphy and a suspension of the uterus, we are not performing five operations, but we are executing five successive steps of one operation for the cure of uterine prolapse. The omission of one of these steps may bring about failure; their sensible combination means success.

THE TREATMENT OF CERTAIN CONDITIONS SECONDARY TO LOST COMPENSATION.*

By J. GARNETT NELSON, M. D., Richmond, Va.

An attempt to undertake treatment of conditions under discussion necessitates consideration of the physiological and pathological changes of the various organs and other portions of the body affected solely by imperfect cardiac action. These changes may be generally classified as acute or chronic, local or general, active or passive, hyperemia, edema and anemia. Any of them may upset profoundly the normal physiological action of any portion of the body, but the chronic conditions alone can cause pathological changes or at any rate, pathological changes of more than transient duration.

Active hyperemia will not be spoken of, inasmuch as although lost compensation is a strong predisposing factor, it is for the most part, at least, not directly responsible. Active hyperemia is an arterial condition accompanied by an excess of arterial blood, except, of course, in the pulmonary circuit; while what I am after now is a consideration of conditions associated either with too little arterial blood or an excess of venous blood.

The proper management of any of the above mentioned results of lost compensation requires some consideration of the blood pressure as well as the condition of the walls of the blood vessels. The condition of the kidneys also must be looked into. Indeed, the relation between the heart, blood vessels and kidneys is so intimate that at times our attention must be devoted to the vessels and the kidneys before compensation may be restored. However, as a rule, no matter what the condition of the vessels and kidneys may be, congestions and edemas are not likely to occur so long as the heart is sound, as illustrated by general sclerosis, marked hypertension, great diminution of or even total suppression of, the urine without any special accumulation of blood or serum in any organ, cavity or loose tissue of the body.

Before treating such cases as are under consideration, we must decide positively if possible, whether the heart failure has developed suddenly or gradually. For example, edematous lungs or greatly enlarged livers when due to sudden dilatation of the heart, may be relieved in a remarkable fashion by bleeding freely: whereas, if due to a gradual dilatation, or loss of power without dilatation, or slowly progressive regurgitation, venesection would not be indicated.

The important portions of the body most apt to be seriously affected by the sudden loss of compensation are the brain, lungs, liver, and kidneys; while after gradual failure, we find trouble in any or all of these organs as well as any of the serous sacs, the stomach, intestines, systemic veins or any of the loose tissues. Usually, quickly developed results if relieved, leave no permanent traces, while those of gradual development may be permanent and irreparable. Such permanent changes may be well illustrated by those occurring in the lungs as, for example, chronic bronchitis, emphysema, asthma or even pulmonary infarcts from stasis, especially in mitral disease with syncope, dyspnea, hemoptysis, unconsciousness and, possibly, sudden death.

In order for the line of thought I am following to be of any practical value, it must all be boiled down to just two questions: Is it true that all the results of lost compensation may appear in any one organ? And granting this, does the treatment of lost compensation depend at all directly on these results? The first question is easily answered. To illustrate briefly, it is well known that we may find as direct results of lost compensation any one, two or more of the following conditions: Chronic bronchitis, emphysema, fibroid pneumonia, a tremendously enlarged liver similar in most respects to an ordinary hypertrophic cirrhosis, kidney lesions especially characterized by excess of connective tissue, chronic enteritis with or without ulceration, varicose veins with ulcers, tremendous ascites with no edema of the lower extremities or vice versa, and so forth. Why these isolated, localized effects of back pressure should occur has not been made clear, but the facts remain that they do.

The second question may not in all instances be answered so readily, but in others an affirma-

*Read before the Richmond Academy of Medicine and Surgery, November 23, 1909.

tive answer is easy. Indeed I may say that in all the fields of medicine or surgery it is difficult to find any line of work from which more satisfactory results may be expected. Given a clear and complete diagnosis, and two and two make four almost as certainly as when we are treating malaria or syphilis. The word "complete" is used advisedly here, for the reason that incomplete diagnoses of the conditions mentioned above are far more common than they should be. This is especially true of conditions within the lungs, stomach and intestines arising directly from venous stasis. How many of us are there who make routine examinations of the cardiovascular system when we prescribe for chronic bronchitis, winter coughs, chronic indigestion, diarrhea or dysentery, all of which conditions are frequently due to loss of vitality in local protoplasm that can only be relieved by attention to the heart?

In a paper of this scope, discussion of details of treatment must be very limited. The utmost ingenuity of physician and surgeon working together may be needed and all the numerous methods of treatment peculiar to the art of medicine may have special uses. So then aside from surgery, the treatment may be generally classified as hygienic, dietetic, electric and medicinal. I am leaving to the surgeon pretty much all local measures, such as aspirations, decapsulations, anastomoses, or operations done for the purpose of promoting a collateral circulation. A wide field, to be sure, and one to which he should be strictly confined. It is a curious fact that although general practitioners and internists often realize their need of surgical aid, the surgeon who will not undertake to treat pretty much anything is still entirely too rare. It is also to be regretted that the need for more careful study of and greater familiarity with cardiac conditions in general is not better appreciated by the general practitioner or internist. Of course this applies to such conditions as complications of various diseases, especially the acute infections, possibly even more than to the subject of this paper.

In passing, I take this opportunity of saying that I believe that when we undertake to treat any of the acute infectious diseases and do not examine the heart daily, or in some cases, as, for example, pneumonia, several times a day we are not doing our patients or ourselves justice. The consequences of our carelessness along this line are illustrated all around us in our own families or connections far too frequently. It seems to be true that the majority of deaths occurring at or about fifty years of age could, under proper management, be staved off for at least another decade. I believe that every human being thirty years of age or over, should have his heart, blood vessels and kidneys thoroughly studied at least twice a year, about as often as we go to our dentist. We go to our dentist because we know that teeth soften or decay so gradually and insidiously that it is wise to be constantly on the lookout for trouble. The changes in the cardiovascular system and kidneys are just as insidious, and with many of us the length of our days depends directly on their early recognition. Treatment at this time may not restore tissues that have undergone pathological changes to their normal condition, but the process may be entirely arrested. And it is entirely true that routine work of this sort will frequently reveal definite local diseased conditions directly dependent on a mild but persistent venous stasis. For example, the urine may be examined and evidence of a mild interstitial nephritis found.

Demonstrating the heart's responsibility here may be difficult, but it should be positively proven or eliminated, and the treatment regulated accordingly. If we admit a growing teaching, we must believe that chronic interstitial disease of the kidneys is frequently secondary to cardiacs or cardiovascular trouble; and the usually accepted evidences of advanced kidney disease are really but signs of general disturbance of metabolism, while the kidneys themselves are capable of doing all that would be required of them under normal conditions. The problem that confronts us now is the possibility of continuously increasing or diminishing the blood supply of any organ establishing a sort of petcock system that we may turn off or on at our pleasure.

Of course, the simplest way to switch the main volume of the blood from any one organ is to remove it entirely by venesection, and next in efficiency comes the use of the nitrites whereby we may effect the accumulation of a large portion of the blood in the splanchnic area. If the nitrites are being used for this one purpose they may, as a general rule, be much aided by sweating and brisk purgation.

On the other hand, generally speaking, the

amount of blood reaching any given organ may be increased by local applications of heat, and the use of such means as we have at our disposal for stimulating the heart, the vasomotor center or the muscle fibres of the arterioles. Efforts along this line meet with success in direct proportion to the skill of the physician, and skepticism or any tendency to drug nihilism has as its only excuse either inexperience or ignorance.

As a practical illustration of the principles involved conditions found within the lungs suggest themselves. The most frequent acute complication is the simple congestion, suddenly developing and frequently fatal, but responding to well directed efforts in almost miraculous manner. Responding to a hurried call the picture found, for example, is that of an aged person who has made some unusual physical exertion or undergone some extraordinary emotional disturbance and been seized a few moments later with severe and increasing dyspnea accompanied by frequent coughing with frothy, blood-stained sputum, and marked cyanosis. A rapid examination shows lost compensation as the responsible factor. A small dose of morphine should be quickly given; some surface vein, as the median basilic, exposed and free venesection accomplished. Given such an opportunity, and it is within our power to save life just as certainly as an expert swimmer does when he rescues someone from drowning.

The immediate danger of death being removed, our next object is to restore the lost compensation, all the while considering the special organ that has been disturbed. In the usual low tension condition, the indications are for rest, heat to the extremities, good ventilation, enemata or purgatives, and sufficiently large doses of digitalis, thereby helping the left ventricle to suck the blood from the pulmonary veins and increasing the driving power of the right ventricle. One of the best adjuvants to digitalis here is the sulphate of spartein, or better still, a fresh infusion of scoparius itself, directly stimulating the right side of the heart and increasing the flow of the urine.

In order to bring this paper to a timely conclusion, I have compiled a few brief statements as to the physiological action of the best known cardiac tonics and stimulants, vasoconstrictors and dilators and their consequent indications in certain special conditions mentioned above.

Digitalis nourishes the heart muscle, enables the ventricles to suck the blood from the pulmonary and general venous circuit, increases the driving power of both ventricles and raises tension; indications, all low tension stases or edemas and secondary inflammations, e. g., anasarca, bronchitis, enteritis.

Strophanthus is similar to digitalis except for minimum effect on arterioles; the indications are similar unless tension needs special attention.

Caffein deserves more popularity than it enjoys. It is very reliable. The sodio-salicylate and sodio-benzoate are more soluble than the citrate and, therefore, to be preferred. Caffein stimulates the vasomotor center, increases the force of the ventricular contractions and has a decided diuretic action. Indications, low tension conditions with hyperemia or edema, and especially, dilatations in the splanchnic area with marked tympanitis.

Strychine stimulates the heart and vasomotor centers and raises arterial pressure. It is especially indicated where prolonged medication is necessary, as in chronic bronchial or intestinal troubles.

Epinephrin, generally used under some other name, as adrenalin, adrin, adnephrin, suprarenalin, causes a constriction of the blood vessels with consequent high rise of blood pressure; a stimulation of the vagus center with slowing of the heart, and a direct stimulant and tonic effect on the heart muscle. Its usefulness is limited, and for the present, must be confined to acute low tension conditions.

Passing, for brevity's sake, to the opposite line of thought, namely, that in which we see the metabolic changes accompanied by increase in connective tissue and, frequently, raised pulse tension, the drugs most useful are the mercurials, iodides and nitrites. Properly selected and aided, they are useful in all secondary fibroid conditions especially apt to occur in the lungs, cerebral vessels and membranes, kidneys and liver. The nitrites most commonly used are amyl nitrite, nitroglycerin, sodium nitrite and erythrol tetranitrate. The duration of activity of single doses is in the order named above, that of nitroglycerin being about thirty minutes and of erythrol tetranitrate about three hours.

The results of the combined efforts of the surgeon and internist are well illustrated by the history of the case recently reported by Dr. La Roque—a decapsulation for ascites. The

immediate results of the operation were truly wonderful, but the ascites and edema returned. The man is, at present, entirely free from any accumulations. Rest, purgation and digitalis were useless. Acknowledging the surgical interference as a life-saving measure, I think that the fact that he is now alive is due to spartein sulphate and the nitrites.

THE EFFECT OF PREGNANCY ON LARYNGEAL TUBERCULOSIS.*

By C. R. DUFOUR, Ph. D., M. D., Washington. D. C.
In Charge of Eye, Ear, Nose and Throat Clini Georgetown University Hospital, and Ear, Nose and Throat Clinic, Eastern Dispensary and Casualty Hospital, Washington, D. C

I bring this subject to your notice, from the standpoint of a laryngologist. Having had a couple of cases of laryngeal tuberculosis complicated with pregnancy, being much interested in it, and believing a full discussion will be of benefit and interest, and may help clear up some of the mooted points, I have ventured to bring it before this society.

It is generally the fact that when the tubercular germ gains entrance into the system, tuberculosis of one or more of the organs of the body will result. In regard to its effect on the throat, there may be a primary laryngeal tuberculosis, or there may be a secondary infection from the lungs.

The question is sometimes asked: "If a woman has pulmonary tuberculosis, will there be danger of the larynx becoming affected if she beomes pregnant?" In other words, will pregnancy cause laryngeal tuberculosis in one having a pulmonary infection? If there has been inflammatory attack of the larynx, if it is chronically inflamed, or if it has been weakened from excessive use or from any cause, there is reason to believe that it may and will become tubercular, and that gestation is one factor in causing it, but this we cannot entirely substantiate. Gestation will cause a latent tuberculosis to become active. I think this fact can be proven. Because of the cases where the disease was latent, there was no discomfort. the laryngeal mirror did not reveal any of the signs, after pregnancy, the larynx showed all or most all of the symptoms of a tubercular infection, this process occurring too soon, to be diagnosticated as a primary infection, or an extension from the lungs.

Those of you who have tubercular patients know how difficult it is to sufficiently nourish them. If we find this difficulty in nourishing one, it must be doubly so to supply nourishment for two—the mother and the fetus. The mother must supply a constantly increasing amount of nourishment for the fetus. If this nourishment is not supplied, the mother becomes worse. If there is much swelling of the arytenoid cartilages, the vocal cords infiltrated, a perichondritis present, these conditions, together with the enlargement of the abdomen, cause the breathing to become difficult and a rapid impairment of the health and of the larynx will ensue. Most pregnant women have vomiting spells during the first few months, sometimes throughout the full period. This condition is a very painful and dangerous one. It causes an increase of the pain and dysphagia already present injures the larynx, and if ulcerations are present will cause them to become worse. Severe coughing spells will cause the same results, I have just mentioned. Premature labor is sometimes induced by a severe vomiting and coughing spell. If this does not occur, the patient becomes worse rapidly, and if she survives the birth of the child, will most likely die soon after.

Child birth is more dangerous to a tubercular mother, than is pregnancy, though the latter condition is full of danger. The loss of blood consequent upon the birth of the child and the weakening effect on the heart will frequently cause a fatal termination. In looking up the literature of this subject I find most authorities agree upon this fact, that where laryngeal tuberculosis, complicated with pregnancy, the woman goes to full term and the child is born, the mother does not long survive. When there is pulmonary tuberculosis without laryngeal complications, the result is not so fatal.

Laryngeal tuberculosis whether present at the time or developing during gestation, is increased very much during pregnancy. This development of the disease renders suffocation imminent, from the edema which often accompanies it. Tracheotomy is the only means for relieving the suffocation, and as it cannot always be done in time to save life, this fact has led to the acceptance of laryngeal tuberculosis as a positive indication for the artificial interruption of pregnancy.

Dr. Ehrenfest in Peterson's *Practice of Obstetrics,* says: "Let us not consider this point as yet, we must answer the questions. what becomes of the mother if we let gestation go to

*Read before the Georgetown University Medical Society.

the end of the normal period and what becomes of the child? I have seen an unusually large number of such cases in my practice, in which the mother invariably died shortly after delivery and the child in almost every instance. A gloomier outlook can therefore hardly be imagined; and the question of treatment was settled in my mind long ago."

Prof. Kuttner, of Berlin, Germany, reports 231 cases, 200 of whom died during pregnancy, or shortly after confinement. He says that pregnancy no doubt formed the turning point in the fate of these patients. During this period the changes took place which were the beginning of the end.

Dr. Freudenthal of New York substantiates these statements, he having had a large experience from being for many years connected with tuberculosis hospitals. He also says that it would mean death to both, to let a woman carry the child to full term. He quotes three cases as follows: *Case* 1. A primapara, age 23 years, seen in ninth month of pregnancy, suffered very much from dysphagia. There was ulceration of vocal cords and interarytenoid space. Both lungs were affected. Local treatment did not ameloriate the condition in the larynx. At the normal term she gave birth to a dead child, and twelve days after, she died. Premature delivery would have done no good, as the pregnancy was too far advanced. *Case* 2, a sextipara, had acquired tuberculosis before becoming pregnant, was in fifth month when first seen, there was ulceration of cords and arytenoids. The right apex of the lung was tubercular. Immediate abortion was advised but refused. Every thing was done but without benefit, and she died soon after. *Case* 3, a woman brought into St. Mark's Hospital, about the end of pregnancy, she had tuberculosis of the lungs and of the larynx. There was diffuse infiltration and an ulcer on the epiglottis. Many of the physicians present were surprised to hear the grave prognosis of the case. She died sixteen days after childbirth. The child lived several months. The pregnancy was too far advanced to interrupt. Dr. S. Marx reports a case of a well known singer, pregnant, in third month, showed incipient pulmonary tuberculosis, with ulceration of the larynx, abortion was induced, and the patient sent away. She is now living in his city and in full possession of her health and voice. The abortion was done seven years ago. Dr. Marx's second case was similarly affected. She went to full term and died six weeks after confinement. Dr. Marx makes it a practice to induce abortion as soon as he can, in such cases.

Dr. Cragin writes that out of 8,000 deliveries at the Sloan Hospital, they had only 13 cases of tuberculosis, and none having laryngeal involvement. He accounts for such statistics in that they do not admit active tubercular cases into the hospital. He also states that he remembered having delivered one woman with marked laryngeal tuberculosis; she died a few months following her confinement.

There are reported a few cases that did not become worse during pregnancy and after delivery. There is room for considerable doubt as to the laryngeal affection being tubercular. There may be inflammation and even ulceration of the larynx, without its being tubercular. The cases reported by Marx, Kuthner, Freudenthal and others were far advanced, and a thorough diagnosis was made.

Tracheotomy sometimes is of benefit in laryngeal tuberculosis, a few cases having been reported. It is of undoubted benefit in the non-pregnant cases. The usual treatment must be given to these cases. Where there is a general tubercular affection of the larynx, the early interruption of pregnancy is the only means of saving the mother's life. If the case is seen late in pregnancy or near the end of it, it will be of no benefit to empty the uterus, or if the disease is rapidly progressive, and it seems that the mother cannot live, then it would also be useless to induce abortion.

The medico legal side of this matter has been very thoroughly discussed. The general opinion is that, no judge or jury would condemn a reputable physician, for doing what he thinks best for his patient. The result of investigation shows that each case must be decided on its merits—that alteration in the entire organism connected with every gestation, the changes in circulation and respiration, weakening in consequence of vomiting, insufficient nutrition, inadequate sleep, are to be considered as predisposing factors in causing the laryngeal affection. In Kuthner's cases he says of about 230 cases of pregnant women with laryngeal tuberculosis three survived a natural confinement, for one to one and a half years. Thirteen for a longer period—in all, 16, between 7 and 8 per cent. Among the sixteen women, the laryngeal affection did not commence until the latter

part of gestation. Artificial abortion was induced in twelve cases; in nine of them with good results; in three without success. Tracheotomy was performed fifteen times; two survived confinement one to one and a half years; two still longer, eleven died soon after. Of 116 children concerning whom he had definite information between 79 and 80 per cent. are reported dead, 18 living at birth, or in the first two years, 19 as living a longer time. In wealthy families the mortality of the children was less than among the poor; likewise do the chances for the child seem better when the mother's life is saved.

1343 *L Street, N. W.*

REPORT OF TWO CASES OF PELLAGRA.*

By J. L. EARLY, M. D., Saltville, Va.

In the early spring my associate in practice, Dr. Dunkley, and I were confronted with two patients whose condition seemed entirely different from any we had ever seen. Our journals and magazines at this time were making numerous references to pellagra, and from the similarity of the symptoms we diagnosed our cases as pellagra, but owing to our meagre knowledge of the disease, we at first hesitated to report them as true cases. However, after informing ourselves more thoroughly, and watching the course of the disease, we felt sure our diagnosis was correct.

First Case.—General History. Mrs. S.; white; age 29; Virginian; married; mother of five children, two dying infancy; family history negative; lived in and around Saltville all her life; had never been ill before except the diseases of childhood; ate very little corn bread, and so far as her history can be gotten, never was especially fond of same. She was delivered in May, 1908, at full term of a still-born child and for the next year her health was not good; had a poor appetite; lost flesh and complained of headache; vague pains in various parts of the body, and also of a sense of dryness and roughness of the skin. In the month of May, 1909, one year after birth of still-born child, she went out in the field to pick strawberries. On returning she showed her hands to her mother, remarking that she had sunburned the back of them severely. This was the first external symptoms of the disease to be seen.

Skin—The backs of the hands at this time did appear as if they were sunburned, but on examining more closely it could be seen that the skin was rather thick and indurated, and was accompanied by little or no soreness.

The face was attacked in a few days and the dermatitis appeared on cheek, forehead and chin, extending down on chest in the shape of two triangles, bases upward, apices about level of ensiform cartliage.

On her back, the eruption followed the border of the scapula for about the same distance in two diverging lines. It was symmetrical, both sides being almost exactly alike, the skin being red, dry, scaly and slightly indurated with sharply defined borders, the dermatitis breaking off abruptly into normal skin. On scaling off it would leave a red condition of the parts, and for a short while would seem improved.

The alternating scaly and red condition continued until September, when a more marked erythema developed over the same area, accompanied by blebs containing sero-pus, and involving the deeper layer of the skin. From this on the patient presented the most repulsive appearance imaginable—the whole face to the edges of eyelashes and back to ears being covered by a black scab which, on removing, left a raw sore. No case of confluent smallpox could have been more repulsive. In about a month the huge scales came off and the raw surfaces healed, leaving the skin with a brown or coppery discoloration. At no time was there any eruption in palms of the hands, but she did complain of dryness and hardness of the skin in these parts. During October there was a slight line of erythema on feet where shoes were tied.

Gastro-Intestinal Symptoms—At first the patient suffered with alternating constipation and diarrhea; later a most obstinate diarrhea set in, which lasted until near the end, occasionally passing a considerable quantity of blood in stools; number of stools being fifteen or twenty in twenty-four hours, in spite of anodynes and astringents given; complained of violent pains and cramp in stomach and abdomen after taking nourishment.

The tongue and buccal surfaces were at first red, accompanied with an excessive flow of saliva, later became denuded of the epithelium; mouth and tongue were very sore and sensi-

*Read before the Southwestern Virginia Medical Society, held at Roanoke, Va., December, 1909.

tive, so that she complained of all food hurting her. Later her mouth and throat became dry and crusty, was unable to swallow anything unless it was soft. During this time patient could not protrude tongue, and it presented the typical bald appearances described by others. Lower lip seemed stiff and drawn down; hence was unable to close mouth. For the last two weeks bowels moved involuntarily; bladder refused to empty itself, requiring catheterization. During illness temperature was from 97 to 99⅘; pulse in proportion.

Nervous and Mental Symptoms—Speech slow; mental faculties dull; Argyle-Robertson pupils; gait unsteady; Romberg symptoms; patella reflexes diminished; very nervous, suffered with tremors, which increased in later stages until they almost resembled convulsions, but differed from these in the fact that on firmly seizing and holding the limbs the tremors could be stopped for awhile. This case had some delirium, but no dementia.

Second Case.—Mr. H.; white; age 54; married; Virginian; occupation night watchman; education limited; family history negative; health good until eight years ago. Since that date, while he has had no serious illness, still his health seemed to fail and for the past three years has presented an emaciated and unhealthy appearance. In younger days he drank corn whiskey to excess, but in later years drank very little; disliked corn bread, ate very little, preferred other bread if he could get it.

In July he was compelled to quit his work on account of weakness and vertigo; complained of headache, irregular appetite, pain in the stomach, and alternating diarrhea and constipation. As in previous case the first external symptom was what he called a sunburn on backs of both hands, occurring after working in his garden on a hot afternoon. As this case is similar to the former, those symptoms only which differ will be taken up.

First—Eruption was of a dry variety, was not so severe, no blebs or blisters were present, and was not seen on chest, but a small area on each side of the neck was affected.

Second—Salivation was more pronounced, saliva literally pouring from his mouth all of the time; could only speak a word or two without expectorating. In the mornings his mouth was perfectly glued together, and on opening same strings of saliva could be seen stretching from lower to upper jaw. Tongue and buccal surfaces were similar to case first. Bald tongue was characteristic; patient suffered with excruciating pain in the stomach after taking food; bowels were loose, but more amenable to treatment than in former case. Appetite very irregular—sometimes voracious, at others almost absent.

Third—The gait was very unsteady and tottery, so unsteady in fact was he, that a number of people seeing him walk at a distance and not knowing his true condition, reported that he was intoxicated. Mental faculties fairly clear until October; then he became demented; refused food for five days; then became slightly better, and since has been in more or less of a demented condition. At present, in his demented, bed-ridden condition, it is only a question of a short while before a second fatality will occur.

As for the *treatment*, these patients were given constitutional tonics, such as iron and arsenic, and otherwise treated symptomatically, nothing given producing any beneficial results.

So far as our observation goes, in these two cases, I am convinced that the medical profession is confronted with a disease practically unknown in its origin, uncontrollable in its course—so far as our present knowledge extends—and fatal in its results in a large per cent. of the cases.

Let us hope that in the near future some way of combatting this malady will be discovered.

INVAGINATION OF THE SMALL INTESTINE INTO THE COLON; OPERATION; DEATH.*

By J. THOMAS KELLY, M. D., Washington, D. C.

John A., aged four months; always been a healthy baby, was taken sick November 23, 1909, with vomiting of milk. A physician was sent for, who gave castor oil and washed out his bowel, from which there was a slight evacuation (just enough to stain the napkin). The baby continued to vomit milk, and was put upon rice water, which he did not vomit, but continued to get worse all the time. The physician who attended him in the country said at no time was there any distension nor

*Read at a meeting of the Medical and Surgical Society of the District of Columbia, December 2, 1909.

could he find any tumor. Each time the napkin was removed it was slightly stained with fecal matter.

The child was brought to the city November 29th, when it was seen by the family physician, and I saw it the next morning. The child was emaciated, and looked very ill. The abdomen was slightly distended, and on the napkin which had just been removed was a slight stain of fecal matter. On the left side of the abdomen, following the course of the descending colon, a distinct tumor could be felt. On putting the finger into the rectum the invaginated gut could be felt about an inch and a half from the anus. A diagnosis of intussusception was made. The child was thought to be too ill for an operation, but was sent to a hospital, where salt solution was allowed to flow slowly into the rectum, the baby being held up by the feet. When I saw it in the afternoon it seemed a little improved, but the invaginated gut could still be felt near the anus.

The parents begged that an operation be done. On opening the abdomen the small intestine was found to have inserted itself into the colon from the illeo-cecal valve to within an inch and a half of the anus. This was pulled out, but the part above the cecum was so necrosed and gangrenous that the head of the cecum and about four inches of the illeum had to be resected. This was done very quickly, the child being removed from the table in as good condition as when he was placed there. His bowels moved soon after he had reached the bed. In spite of stimulation, he died about eleven o'clock the same night.

The point of chief interest in the case is that the patient lived seven days after the intussusception occurred, and also to note with what ease an operation might have been done had the diagnosis been made earlier.

1312 *Fifteenth Street.*

Discussion Reported by Dr. F. E. Harrington.

Dr. Wm. P. Carr said that such cases should be diagnosed early, because of ready symptoms present. The condition was too often treated for something else without a thorough examination to disclose the real existing conditions. He mentioned a similar case under his care with spontaneous rectification.

Dr. Reichelderfer said that the finger passed well up into the rectum made diagnosis easy, because the invaginated gut could be felt in most cases. He mentioned a case so diagnosed under his care.

Dr. Vaughan said that the diagnosis in children was comparatively easy, as it was not uncommon for the small intestine to reach as far as the anus, even to protrude. He mentioned a case of intussusception, in which the child continued to have movements of the bowels. Recommends immediate operation in all cases.

Dr. Kelly, in closing, said that in the case reported impaction was extensive and resection of bowel necessary.

HOOKWORM IN VIRGINIA—ITS PREVALENCE IN CERTAIN PIEDMONT SECTIONS.

By J. ALEXANDER WADDELL, University, Va.

About the middle of June, 1909, Mr. J. A. Dinwiddie, of Franklin county, became interested in some articles descriptive of hookworm disease; and, suspecting it to be the cause of the anemia in certain children of his neighborhood, he sent fecal matter from them to the Hygienic Laboratory in Washington, D. C. On microscopic examination, Stiles found hookworm eggs. He communicated the matter to the Health Department of Virginia, and Drs. Williams and Freeman at once took steps to have the situation investigated. As a result, after special training in the diagnosis and treatment of the disease at the laboratory of the United States Public Health and Marine Hospital Service, I was sent to determine the extent to which uncinariasis prevailed and to treat a few selected cases.

The territory in which I worked is near Roanoke, Va., and some fifteen miles east of the Blue Ridge mountains. It is drained by the Staunton river. The topography is typically piedmont—high hills, narrow valleys, swift streams, freestone water, red clay soil. The waste land exceeds the cultivated. Tobacco is the staple crop. Grain and fruit are raised to a limited extent, but not in sufficient quantities to supply the local needs.

The population is relatively scanty. The people, descendants of the original settlers, are very poor and often illiterate. Their houses—two or three-roomed cabins—are built on the

tops or the sides of hills; very rarely on the banks of the streams. The houses themselves are usually neat and clean, but as not one of the families has a privy, soil pollution is universal.

On an average, there are about five children per family. No data was available for determining the rate of infant mortality. All the children go barefooted during warm weather. The same is true of many of the adults after rains and when employed about their premises. Few negroes were encountered—only two families being seen during the course of my investigation; and in neither of these did I feel that an examination would be fruitful.

In conducting this investigation, three steps had to be taken in succession: (1) The location of families in which there were probable hookworm victims; (2) the physical examination of the members of these households; and (3) the microscopic examination of the feces of suspected sufferers.

I was greatly aided in locating the hookworm families by making inquiries of the country merchants as to which of their patrons had anemic, weakly children. On visiting a family I usually had little trouble in securing permission to examine the children. In only a few cases was my request refused. But there was great trouble in getting the material for the microscopic examination. If the physical examination was positive the parents would promise quite readily to collect the stools next morning, but frequently, on one or another excuse, they disappointed me. However, I was able in a majority of the cases reported in this paper to find hookworm eggs in the feces, and there are no cases reported except those from families in which one or several microscopic examinations were made to confirm the diagnosis, however clear the physical signs.

In making the physical examination attention was paid to the following: Anemia, its degree and duration with inspection of the skin, conjunctiva, nails and oral mucous membrane; facial aspect, general mentality, manner of responding to questions; quality of the hair, position of the shoulder blades, pain in the epigastrium; physical endurance, dyspnoea, cervical pulsation; headache, tympanites, œdema, irregularity of menstrual periods; reputed laziness, habitual drowsiness; foot-itch, dirt-eating.

There was rarely any difficulty in finding the hookworm eggs. Indeed, they were so readily found in the majority of instances that I rarely had to examine more than three slide preparations. When I had specimens from several patients to be examined, especially after one or two courses of treatment had been administered, I used a modified technique, which was as follows: If the ova were not found after examining three slides, a piece of the fecal matter the size of a chestnut was made into a thin suspension in a nine-tenths saturated salt solution. This was then set aside for an hour, after which the surface of the liquid was examined by putting a few drops of it on a slide. The eggs, being less dense than the liquid, floated to the surface and could thus be greatly concentrated. By this method, from thirty to forty minutes could be saved per stool examined.

The geographical distribution of the cases of hookworm infection reported in this paper is as follows: Franklin county, 54 cases, of which 36 are on Grimes' Creek in the northwest portion of the county, 12 at Haleford in the north central, and 6 at Scruggs in the northeast; Bedford county, 14 cases, of which 12 are at Radford Church, while the other two were located each in a different neighborhood.

Grimes' Creek was the only locality which I could investigate systematically. Here, nearly every child in an area of about six square miles was examined. Over 60 per cent. of the children were found to be infected. Of the fifty-two examined thirty-two were suffering with the hookworm disease, as was shown by their physical characteristics and verified in twenty-one instances by microscopic examination. In addition to the above, there were also found four hookworm adults, but in these signs were not as evident as in the children.

It being impossible for me, in the limited time at my disposal, to examine each family in a territory more extensive than that designated as Grimes' Creek, I adopted the plan of working for a few days each in the vicinity of certain country stores. By this procedure I was able to estimate roughly to how wide an extent the disease prevailed. The results were as follows: (1) At Haleford, I examined twenty-one children, and found twelve of them to be infected. Five of these diagnoses were verified by microscopic examination. (2) At Scruggs' I examined ten persons and found six of them to be infected—

two adults and four children. These were as typical cases as I saw. Four of the diagnoses were verified by microscopic examination. (3) At Radford Church I examined fifteen children and two adults. Both of the adults and nine of the children had hookworm. Six of these diagnoses were verified by microscopic examination. (4) Other places, at which one case each was found, were Spraddling's Store, Davis' Mill and Stone Mountain. The localities mentioned above are from three to fifteen miles north, east and south of Grimes' Creek. I also worked as far as five miles westward, but, while the individuals examined bore the physical characteristics of the disease, I was unable to secure material for microscopic examination.

The symptomatology of the disease encountered by me was characteristic. According to the degree and duration of the infection, the symptoms obsereved and the frequency of their occurrence were as follows:

Constantly present: Anemia, corpse-like skin, dry hair, headache, vacant stare, dilated pupils, dyspnoea on slight exertion, reputed laziness, foot-itch, partial amenorrhea. Usually present: Winged shoulders, tympanites, edema of the ankles, bloated face, slight diarrhea. Rarely present: Pain in the epigastrium, dirt-eating, constipation.

The records of two cases in my series will be given in detail:

A.; female; 20 years of age; fairly well developed; poor health for several years; anemia extreme, sclera porcelain-like, conjunctiva bloodless, gums white, nails chalky, hair and skin dry and dead-looking; pain in the epigastrium, shoulders not winged, pupils dilated but responsive, vacant stare, very weak, headaches frequent, appetite capricious, bowels irregular, history of foot-itch, partial amenorrhea. This patient was given 60 grains of thymol. The stools were collected on the day of treatment, washed through a piece of cheese cloth, and the number of eggs computed. On careful estimation there were not fewer than 1,500. This estimate agrees tolerably well with Grasse's rule of allowing for an infection of 1,000 worms when from 150 to 180 eggs are found per c. cm. of fecal matter. The stools of this patient had contained upwards of 250 eggs per c. cm.

B.; male; 10 years of age; under developed; breaks down when doing light work in the field and unable to continue at school for a full session; anemia marked, hair and skin dry and dead-looking, vacant stare, short of breath, winged shoulders, bloated face, pot-bellied, headache frequent, does not sweat, history of foot-itch.

I found, on my arrival, that Dr. West, of Bedford City, had commenced treatment of the cases diagnosed by Stiles, and that Dr. Moorman had given a dose of thymol to one of his patients. But these cases had not received attention until after our State Board had the matter under advisement. I should like to mention that the latter gentleman rendered valuable assistance while I was in his territory.

I could not, in the short time at my disposal, treat but a few of the cases I encountered. My procedure was to treat certain selected persons in a neighborhood, always seeing them on the day the thymol was taken. I would then continue the investigation in that or some other section, return at the end of a week, re-examine, and, if necessary, administer another dose of thymol. Frequently, there was marked improvement after even a single dose of the drug.

It should be noted that adults were encountered who, from their statements, had undoubtedly suffered with the disease in their childhood, though they showed no symptoms at the time of my examination. But observation showed that in each instance the standard of living, the occupation, the environment and the habits of such individuals had been radically changed since childhood. I learned of several deaths that were probably caused by the disease.

The mode by which the disease tends to be spread from one locality to another is interesting. Two illustrations will be cited: (1) Mr. M. has a large family; all the children are heavily infected. Miss M., with symptoms just like those of her sister whom I treated for hookworm disease, has recently married and is now living with her husband's family at a point about fifteen miles from the M. home. They have no closets. I predict that several cases will soon develop at this new place. Mr. M., Jr., married last fall into a family with which he now lives. There are several children in that family. I examined him and the children microscopically; he is heavily infected, while eggs were not found in the stools of the children. They have no privy; all go barefooted. Next year five cases may be expected

there! (2) Mr. N. has hookworm in his family. His wife, a dirt-eater, had died before I visited his neighborhood. Miss N., living at home, was examined, and her feces found to be teeming with hookworm eggs. Five little children have recently moved to the N. home. Miss N. married; has for four years been treated by her physician for anemia. I found her to be badly infected and the same thing to be true of two out of three of her puny children. Miss N., single, is keeping house for a family in an adjoining county. Her case is as bad as her sister's. Miss N., married, lives eight miles from her father's home, and her phvsician described her to me as being affected like the other members of her family.

Similar illustrations might be given from each locality investigated, but let me now emphasize the fact that these people, none of them, have privies. They do not realize the danger to which they are subjecting themselves and others. For instance, as previously mentioned, some of the stools examined contained as many as 250 hookworm eggs per c. cm. of material voided. In twenty-four to forty-eight hours under favorable circumstances, the eggs hatch and the infectious stage of the worm's life cycle begins. What a terrible potentiality every forty-eight hours for the infection of new subjects, especially during the warm, moist weather of spring and summer!

Considering the large number of cases found in the localities investigated and the similarity of physical and living conditions in the whole Piedmont region of Virginia, I believe it not rash to predict that, when a complete investigation has been made, the hookworm disease will be found prevalent to an alarming extent among all the foothills of the Blue Ridge Mountains. And may not the same prediction be made in the case of the sandy east and southeast, where the conditions for the spread of the disease are more favorable than they are in the clay soil?

In view of my findings, the following measures are suggested: (1) That every section of Virginia be investigated to determine the prevalence of the hookworm disease. (2) That public education in regard to the dangers of soil pollution in general, and from hookworm in particular, be pushed as rapidly as possible. (3) That employers be advised that their premises may become infected and their families endangered, if hookworm laborers are not treated and if soil pollution is tolerated. (4) That victims of the disease be taught the need of being treated, and that treatment be put within the reach of all.

33 W. *Range*.

IMPORTANCE OF DIET IN NASO-PHARYNGEAL TROUBLES.*

By ALFRED C. PALMER, M. D., Urbanna, Va.

The terms nasal and post-nasal catarrh are gradually falling into disuse—in fact, I might say have been discarded by those members of the profession who have selected this field for their special work. In their stead these troubles are classified as rhinitis or rhino-pharyngitis—acute, sub-acute or chronic according to their time of duration, and hypertrophic or atrophic, as to the pathologic conditions presented.

I shall not, in this brief resume, present a detailed description of what pathologic changes take place in the time involved, nor the concommitant evils following neglect of treatment; time will not permit.

I am persistently reminded that so called "cold in the head," or acute naso-pharyngitis, is the result of special germ infection; as a matter of fact the bacillus influenzæ has been isolated but, so far as I know, so little attention has been paid to its habits that little is known of its nature. I have come to this conclusion, more from personal observation than any other source. I have noticed that the train of symptoms which attend an attack, and the typical epidemic prevalence, at times, very clearly resemble other diseases whose origin in germ infection has been definitely located. As an epidemic I know of none more typical than our annual and biennial and often triennial visitations of acute influenza and its more sturdy kinsman, "la grippe."

The prevailing theory of sudden changes in weather temperature, wet feet, thin clothing, and the like, does not appeal to my sense of reason, other than that these conditions might have over resistent forces, during an epidemic, allowing the infection to find a foothold in our organism. We sit in a draught and sneeze; we come to the conclusion at once that we have

*Read before the Tidewater Medical Society, Saluda, Va., January 10, 1910.

contracted a "cold." Should no further symptoms develop the circumstance passes out of our minds. More than likely the sneezing was caused by the draught being laden with some particles of irritating dust, blown from without or from the window ledge, which lodge on our Schneiderian membrane; but, after a time, should other symptoms appear, we are in the habit of reverting to the instant, be it the day before or the previous week. Who of us will deny the fact that the most prevalent of these epidemics have visited us during the warmer summer weather, when to lower the body temperature by seeking a cooling draught is much to be desired?

When we observe the train of constitutional disturbances, such as rise of temperature, loss of appetite, dullness of intellect, etc., we are still more impressed with the resemblance to other forms of diseases that we know, beyond all doubt, are due to germ infection.

If we will but consider for a moment, we must conclude that the nasal cavity, and its tissues, constitute all that can be desired as a hatching ground for these prolific bacilli. With its many nooks and folds, covered with soft mucous membrane, underlying which we find erectile tissue, richly supplied with myriads of blood vessels—all go to show how easily these colonies can be nourished.

Mild attacks of naso-pharyngitis give us little concern. As a rule, their duration is from forty-eight hours to a few days, leaving the patient but little the worse for wear; but when we come to consider la grippe we have a much more serious problem to confront. The invasion of this enemy generally leaves more or less destruction behind. Its forces are of a more vigorous and restless nature. After it has planted its colony somewhere on the nasal mucosa, this germ forthwith begins to migrate, and, in a short time, will begin to explore all adjacent cavities. As a rule, the frontal sinus first receives attention; occasionally one or both antra of Highmore, or, more serious still, bacilli, will ascend the Eustachian tube, infecting the middle ear, then the mastoid process, and finally the brain cavity itself—resulting in brain abscess and death.

I believe that the majority, if not all, of the obscure maladies following la grippe can be traced to infection of one or more of these adjacent nasal cavities. Take what follows the infection and suppuration of the frontal sinus: First, the neuralgic pains over the brow and anterior brain cavity, general lassitude, partial inco-ordination of the muscular system, witnessed in the slaggering gait, congestion of the conjunctivæ—in fine, the partial loss of all of the vital forces—these symptoms are due almost entirely to fluid pressure in the frontal sinus.

I have frequently had occasion to give relief to patients thus affected by applications of cocaine or some of the extract of suprarenal capsule to the anterior ends of the superior turbinated bodies, which will sometimes open the ducts leading into the frontal sinus, and have seen the pent-up fluid trickle down into the nose.

Should these cases be neglected until shrinkage takes place of its own accord, or the distention becomes so great that the fluid forces its own way out, very probably it will trickle over the surfaces of the lower turbinated bodies, finding its way into the superior maxillary sinus, causing a suppurating trouble there. I am grieved when I think of the number of sound and healthy teeth that have been sacrificed, supposing them to be the cause, when it was solely due to an original frontal sinus infection.

In the first stages of these attacks of nasal trouble we all know that the discharges are of a mucillagenous nature, but, when they are confined in a closed cavity, they breed streptococci; hence the consequences, which I will try to describe.

When this pus-bearing fluid finds its vent, it must necessarily, in considerable quantities, gradually pass down through the post nares into the esophagus, thence to the stomach. This process is going on during our hours of working and of sleeping. What is more natural than that, it should be taken up into the circulation contaminating every organ in the body. This, I argue, must produce a general lowering of activity of all vital forces, causing us to hear from the patient a bad history, who presents a conglomerated exhibition of symptoms, of which we can make "neither heads nor tails," but we call them the "result of la grippe."

I have dwelt upon this part of the subject mainly for the purpose of showing how important it is to make a thorough examination of all of the nasal cavities and their neighboring

sinuses when we meet with these uncertain conditions.

You will notice that all I have said has no bearing on what we are pleased to call "Chronic hypertrophic naso-pharyngitis." I can see but little, if any, connection with these former acute troubles of which I have spoken.

Under this head, I beg leave to include not only the various conditions of thickening in the nasal cavity itself (with the exception of deformities of the septum caused by injury, etc.), but enlarged tonsils and pharyngeal adenoids.

These are not due to epidemic prevalence, contagion, or germ infection. I must then look for the cause somewhere else; hence I must not overlook the digestive canal. I will not detain you to describe the objective symptoms of this malady. We are all familiar with the mouth breathing, due to enlarged turbinate bodies, the grape-like adenoids in the vault of the pharynx, and the large and nodulated tonsils, which present themselves to view when the tongue is depressed.

In describing the acute and subacute forms of nasal complications, I referred to the rich blood supply of this locality, making it more readily affected by any abnormal condition of the circulatory system. The next question which presents itself is, what is the most fruitful source from which our blood becomes overloaded with extraneous matter—not including syphilis or other like infection. The answer must be the alimentary canal. The process of feeding is pre-eminently a voluntary act; and, with the art of cooking, seasoning, etc., it has become a most pleasant pastime. So when troubles come from this source, we are very apt to look around for some other cause to offer as a reason instead of accusing ourselves; and we call to our aid "late falls" "early springs," "rainy spells," etc., over which we have no control. After a number of years of observation I cannot lay such soothing unction to my soul, but must indict the habit of extravagant feeding. We are entirely responsible for what goes into our mouths; and as I am such a firm believer in the immutable laws of nature, I do not believe we will have to pay such an unjust debt if we but control our voluntary acts.

As a rule, it is just these patients who are overfed in whom we find hypertrophic naso-pharyngitis. By overloading the digestive organs with heavy, indigestible foods, such as an abundance of meats, acids, sweets, and the like, it must necessarily follow that all kinds of chemical re-actions take place in the stomach and intestines—most assuredly so when these mixtures are taken in such large quantities at a time that the digestive fluids cannot convert more than one-half into any proper condition to be absorbed; added to this extravagance, we are constantly assisting deglutition by large draughts of some liquid to save time in chewing the food properly. This condition of affairs necessarily burdens our blood with all kinds of extraneous matter, like so much muddy water, which, in turn, leaves a deposit in these same little terminal vessels, occluding same, and so retarding the return flow in others that the parts so richly supplied must take on thickening, which, in my opinion, is the most fruitful source of all of our nasal membrane troubles. The busy mother is harrassed by her crying, whining offspring tagging at her skirts; to get a respite, she gives him a nickel and he immediately seeks the nearest confectionery and procures the largest lump of candy his money will buy; the confectioner's conscience is elastic enough to make the lump large enough to please his customer, so he adulterates it with what is nearest at hand. It is in just such subjects as these we find our crops of adenoids and hypertrophied tonsils.

I will not lay down any set rules for feeding, but call upon you to use your common sense in prescribing for these cases. I consider it of just as much importance as if the case was one of digestive trouble *per se*. I first recommend a reduction of at least one-third in quantity taken, restrict the eating of meat to once daily at most, discontinuing the eating of sweets, reduce the amount of liquids taken at meals, and recommend the free use of water between meals. My list of medicines is almost entirely confined to an occasional dose of some good saline to clear the intestine of any impaction that may be adherent to its sides—allowing the regular daily actions to pass without becoming displaced. I also follow these rules in the acute and subacute forms of mucous membrane troubles.

A CASE OF DIPHTHERIA.

By CHARLES S. WEBB, Ph. B., M. D., Bowling Green, Va.

Mr. E. L. R. D., age 56, postmaster, close

confinement and heavy work. Took diphtheria (so he said, and so I believe) from handling the mail, as some specimens were badly broken in transit.

November 18th, slight fever, sore throat, cough, symptoms of ordinary winter's cold. Two days after this I became suspicious of diphtheria, though the examination of the throat was unsatisfactory, as he could not bear the touch of the tongue depressor without gagging. There was some (not much) swelling under the angle of the jaws. The patient was kept closely confined to his room and watched. A day or two after he coughed up a piece of diphtheretic membrane. I was sure of it, but to make it official I immediately sent it to Dr. Ferguson, of the State Health Department. His reply came promptly and was positive. Without waiting to hear from him, however, the house was officially quarantined, the post-office (which was attached to the dwelling) was also quarantined, the mail taken out and fumigated and removed to another building, permission from Washington having been first obtained over the long-distance phone.

On the day that he coughed up the piece of membrane I began the use of antitoxin, using nine thousand units. I had a fairly good view of the throat, and found the fauces covered with membranes. The following day I gave him nine thousand units, the next day nine thousand, the next day five thousand and the next ten thousand, making an aggregate, up to that time, of forty-two thousand units. During this time none of the exudation had come off, but could be plainly seen covering the tonsils, uvula, etc., and had evidently begun to enter the larynx, as shown by the constant cough of the whistling sort, like a child with a bad case of croup. Pulse was 120, soft and weak, though it did not intermit, and continued at that for five days and nights. During that time he was taking strichnia nitrate, grains 1-30, every four hours, and French brandy, one ounce every two or three hours. Not being able to digest milk, he was fed on cream and predigested beef, of which he had a liberal supply. Sometimes instead of the cream and beef he had egg-nog, or jelly, or soft-boiled eggs.

Five days after he had taken the last of forty-two thousand units of antitoxin the membranes were still covering the uvula and part of the tonsils, so I gave him three thousand that day, and three thousand the following day, making a total of forty-eight thousand units. Two days after that the throat was entirely clean. Nevertheless, the pulse kept on at 120, and every attempt at sitting up in bed tired the patient almost to the point of exhaustion. Spartein has the reputation of slowing the heart and of being, in such cases, a good substitute for strychnine, but it disappointed me entirely.

For about ten days now, he had not been able to speak above a whisper, not from weakness, but, as I think, from paralysis of the laryngeal nerves. One thing was sure, the diphtheria had spent its force, and the thing before us was to use the stimulation and nutrition judiciously until the patient could regain his strength. He had from the beginning a distressing cough, much of which I attributed to the exudation in the throat, but now his respirations began to increase in frequency, and his pulse showed a strong tendency to run up, too. Bronchial tubes filled with moist rales and expectoration copious. Dyspnœa soon became distressing. In two days his respirations went up to forty-two, and pulse to one hundred and fifty. All the signs pointed to bronchopneumonia. At this point the inhalation of oxygen was begun and continued at intervals with judicious care. The pulse came down to 120, and respirations 36, and continued at that, without variation, for five days and nights. Then the pulse began to climb to 140, and respiration to forty-two.

It was evident that pulmonary edema had set in. The lungs were completely drowned. The air-cells and bronchial tubes were full, and the serum (darkened from pulmonary congestion) came up through the mouth, as much as half a cupful at a time. Of course, the end was not far off. He died on the thirty-sixth day from the beginning of his sickness and on the 17th day after all signs of diptheria had entirely disappeared.

Three things I had especially feared from the beginning, as complications or sequels: One was nephritis. He had albuminuria every day for two weeks, but after that the urine was normal, except urates in abundance. Another was pneumonia, and all along I had mostly feared pulmonary œdema. I believe yet he would have pulled through if œdema had not set in. There has been no other case of diph-

theria in his family, nor in the town. The fumigation was done with the buckets furnished by the State Department of Health.

MOLAR PREGNANCY,

By A. W. HAMMOND, M. D., Amsterdam, Va.

I have been in general practice in the country for fully twenty years, and have had my full share of obstetric work. But in all that time I have come across only two cases of "*mole* pregnancy."

My first case occurred about five years ago, in a primipara, aged about 20 years. She was about four months pregnant. After losing a considerable amount of blood, she discharged a large fleshy mass described in the books as a "mole." There was no evidence of fetal pregnancy. She made a good recovery.

My second case occurred a few days ago. Mrs. W., aged 18 years, primipara, had missed four menstrual periods. She commenced losing blood per vaginam about two months ago, and also since then has coughed up blood; but a most careful examination does not point to tuberculosis nor other constitutional disease. A few weeks ago after a severe uterine hemorrhage, she discharged a large mass, resembling a bunch of gooseberries, which, with the hemorrhage, filled a chamber vessel. No sign of fetal pregnancy. The patient is doing fairly well at this writing.

PELLAGRA.*

By GEORGE P. HAMNER, M. D., Lynchburg, Va.

In the preparation of this paper no claim is made to originality, except for a few observations made during the study of two cases seen personally, but the data is obtained from the careful and extensive researches of such men as Casal, Frapolli, Lombroso and Marchand of Europe, and of Wood, Lavinder, Searcy, Baldwin and others, of the United States.

History. Pellagra, recently termed the scourge of the South, is by no means a modern disease. It is probable that it existed in Europe for many years before its recognition as a distinct disease.

In 1730 Gaspard Casal, a physician of the Asturias, described pellagra under the name of "lepra asturiensis." This name was applied because leprosy was at that time prevalent in the Asturias, and Casal considered pellagra a manifestation of leprosy.

Soon after this it appeared in Spain, Rome and Aragon. About 1750 the Northern provinces of Italy became its chief seat and seemed to furnish a much more favorable field for its extension, where it became much commoner than in Spain. The name, pellagra, from two words, pelle-agra (rough skin) was first applied to the disease by Frapolli, an Italian physician, who asserted that the disease, pellarella which had been known for many years, was identical with pellagra, and that it was present before the introduction of Indian corn from America.

Roumania, which is now a stronghold for the disease, had no recorded case until 1810. This date is associated with the introduction of Indian corn from Italy in coastwise vessels. In 1826 Marchand recorded the appearance of the disease in the southern provinces of France.

In more recent years it has appeared in Brazil, the Argentine Republic and Uraguay, and also in Africa. In the early sixties sporadic cases were reported in Nova Scotia and New York, but the correctness of the diagnosis was questioned. Pellagra has, without doubt existed in this country for many years; but the appearance must necessarily have been sporadic, for no such death dealing pestilence such as the acute pellagra now so prevalent in the Southern States could have long been overlooked.

G. H. Searcy of Alabama was the first to furnish a positive report: In 1906 he recorded an epidemic of 88 cases occurring in the State hospital for colored insane at Mount Vernon. Of this number 57 patients died.

Since that date the disease has been reported in nearly every one of the Southern States, and many in the North; as far north as Illinois.

Symptoms. A prodrome is acknowledged by all writers on pellagra. It usually begins in winter and is characterized by indefinite symptoms, such as anorexia, or voracious appetite, pain or distension in the epigastrium; frequently diarrhea; though often constipation; insatiable thirst or the opposite. Later there appears headache, which is chiefly occipital; pain in the back and neck, hyperesthesias, dizziness, muscular weakness and uncertainty of motion. Sensations of dryness and burning in the mouth and heat in the stomach have been noticed as first symptoms of the disease.

Though the foregoing symptoms present

*Read before the Lynchburg Medical Society, February 7, 1910.

nothing peculiar, we should be suspicious of pellagra, especially if occurring in the late winter or early spring. There is no definite time between the occurrence of the prodroma and the appearance of the erythema: from four to six weeks may elapse before its appearance, but the erythema almost invariably makes its appearance in the Spring, as early as February or as late as July, most frequently in April or May. The uncovered portions of the body, hands, face and neck (and feet of children and negroes who are in the habit of going barefoot) are first affected, and in many cases the only parts affected.

There is a wide difference among authorities as to the part played by isolation as the cause of the disease, and as it occurs only in the Spring and as far north as New York and Chicago it would seem that the sun's rays are of small consequence. Some writers think that the actinic rays are responsible for the lesions of the exposed parts of the body. The backs of the hands are invariably the first site of the lesions. This was true in both cases which I saw.

The lesions are very distinctive and furnish ample evidence of a positive diagnosis though they have frequently been mistaken for sunburn. The lines of demarkation between the diseased and normal skin are clear, well defined and usually symetrical in position and direction. The lesions begin on the backs of the hands and extend upward to the junction of the lower and middle thirds of the forearms; rarely as high as the elbow.

The general appearance is that of diffuse redness, without swelling, but in some cases there is an edema which may make its appearance before the erythema. The erythema terminates in dry exfoliation, or there may be blebs, which rupture, leaving raw surfaces, these becoming covered by crusts.

The appearance of the skin after healing is variable; it may be soft and velvety like an infant's, or hard and shiny like an old scar; but is invariably pigmented, and the pigment increases with each recurrence.

After the hands, the face, neck, the feet, (dorsal aspect) the legs, sternum and sometimes the labiae pudendi (in the order named) are affected, and the same symmetry is here maintained as in the hands.

There is frequently contraction of the skin in healing, resembling that of superficial burns.

The stomatitis appears usually after the appearance of the erythema but may come before, and is sometimes entirely absent, though it is a characteristic symptom and seldom fails to make its appearance at some stage of the disease. The gums are intensely red and swollen; the tongue is red and denuded of epithelium, and the papillæ are enlarged with furrows between. The patient complains of the sensation of a salty taste and burning in the mouth.

The stomach is variously affected. Hydrochloric acid may be normal in amount or may be entirely absent. Pyrosis, eructation, vomiting, anorexia, bulimia and great thirst have all been noticed by the various writers. One of the most unfailing symptoms is an intractable diarrhea which often assumes a dysenteric character with violent colic.

Nervous symptoms. The first nervous symptoms are usually paresthesias, the chief of which are itching of the backs of the hands and the back; also pain of a burning character in the right and left scapular regions. This burning also often occurs in the epigastrium. The patient will often complain of cold extremities and seek a fire on a midsummer day.

The vertigo of pellagra is a symptom upon which much stress is laid by the Italian observers. It is seldom absent, and is responsible for many falls. There is often a simple slowness of ideas, and a question is often replied to long after the patient seems to have forgotten it.

There may be irritable depression with aversion to activity, and later disturbance of perception with hallucinations.

A condition somewhat resembling tetany is sometimes observed. The gait is simple paralytic, sometimes paralytic-spastic, but never ataxic.

Defininte epileptiform attacks with loss of consciousness are occasionally observed, and the patient may die in such an attack. One of the cases which I had the opportunity of studying died in this manner, the attacks becoming so violent that she remained in an opisthotonous position almost constantly except when under a powerful opiate.

The skin sensibility is irregular. Owing to the altered condition of the patient's intellect and unreliable character of the replies to questions, all investigation of sensation is unsatisfactory. The sense of taste is usually normal. The tendon reflexes may be increased, decreased

or normal. Most frequently they are increased, often to the point of clonic contraction.

The temperature may remain normal, or may range from 99.5 to 102 F.

What is termed by the majority of writers "the third stage" is characterized by general atrophy of the whole body; the subcutaneous fat disappears and the patient presents the appearance of advanced cachexia.

There is profound prostration, the bladder is paralyzed, and the diarrhea is uncontrollable.

"Pellagra sine pellagra" or pellagra without skin manifestations is still a point of contention. It is more than probable that the great majority of such so-called cases are those in which there has been a very mild erythema which has either escaped observation or was not visible at the time the patient came under the care of the physician.

There is no other known disease to-day in which so many opposites are encountered as in pellagra—there may be loss of appetite, or on the other hand excessive hunger; somnolence, or insomnia; mutism, or loquacity; hydromania or repugnance to water. In one of the cases I saw these two existed at different stages of the disease; first there was hydromania, later repugnance to water. There may also be rigidity or exaggerated motility; stupor or excitement.

Pathology.—The pathologic changes are largely dependent on the chronicity of the affection. The most definite are in the spinal cord. The lateral columns are affected and, according to Allbut, the weight of the disease falls on the crossed pyramidal tracts. The effect on the nervous system is shown only after the disease has existed for years. As most cases run very short courses, the opportunity for studying the pathologic effects have been very limited in this country. Pigmentation and fatty degeneration of the thoracic and abdominal organs occur. To this is added atrophy, chiefly of the organs innervated by the vagus—the heart, kidneys, spleen, intestines, liver and lungs. There is atrophy also of the coats of the intestines with hyperemia and ulceration of the lower portion.

The Etiology of this new plague is still a subject for much conjecture, controversy and theorizing. Almost everyone has now agreed that corn is the principal factor, and probably is responsible for it, though just how or in what way it produces the disease has not been worked out.

Corn ordinarily contains many micro-organisms, and certain parts of the kernel make an excellent nidus. Lombroso concedes that the best corn is often most diseased, and that the trouble is rather in some noxious agent which uses the corn as a host; and he laid stress on the fact that healed pellagrins, when given good corn food became affected again.

Moisture is one of the greatest sources of trouble. The corn, besides being gathered green, is not always carefully handled, and is, in consequence, poorly protected from the moisture. It is said that the custom among the Italian peasantry of preserving polenta (a kind of porridge, or mush, made from corn meal) for days and even weeks, allowing fermentation to occur, is the chief source of danger.

Baron Alexander von Humboldt, a celebrated German scientist and author, in his works, furnishes conclusive proof that maize was first found in America, and at the time of the discovery of the new world it had long been cultivated there—green corn being considered an important article of food by the Indians. Many of the tribes celebrated their seasons with religious ceremonies and festivals. In corroboration of Humboldt's statement, Baruine, in a medical treatise in 1600, described a peculiar malady prevailing among certain tribes of American Indians. From his meager description it apparently resembled the pellagra which we have to-day, and was ascribed by him to the use of corn which formed a part of the Indians' daily diet.

Dr. J. H. Hewitt, of Lynnhaven, Va., reports a case of pellagra occuring in a family and with personal history of an idiosyncrasy for corn. Neither he, his father, nor two brothers could eat it without suffering diarrhea, and intestinal pains.

The fifteen cases reported by Edward B. Baily, of Demopolis, Ala., all ate corn meal.

Pellagra attacks the weak and debilitated, and patients with impaired intellect seem especially susceptible. But cases have been reported, however, in strong, healthy persons without apparent defect of the physical or mental faculties. Sex evidently plays an important part, as women are more frequently attacked than men, the proportion being about three to one.

The prognosis of pellagra in the United States is very grave. Fulminating pellagra is an utterly hopeless disease, and few complete recoveries have been reported in even the chronic form. There have been no cases observed of longer standing than three years.

The Treatment of acute cases is of no avail. In the chronic cases it is possible that a cure may result by the removal of all corn food, and general tonic treatment. Alcohol should be interdicted as a beverage.

Lombroso recommends the withdrawal of all corn food, but otherwise a liberal diet, with large doses of arsenic; in some cases he uses baths and cold douches, believing them to be of benefit in certain cases with nerve and skin manifestations; he has found arsenic a valuable remedy, and sodium chlorid of service. Wurzel confirms the value of arsenic and advises the addition of quinin and strychnin in large doses; for the nervous symptoms he uses electricity, massage and salt water baths. Arsenic in the form of Fowler's solution, or of Atoxyl has been given with apparent benefit.

Transfusion of blood from cured individuals to the sick, or even from healthy subjects who have never been affected has been tried with some success, but it is yet too early to claim much from this treatment.

The patches of erythema should be kept moist and supple with oily ointments to which cocaine, carbolic acid, salycilic acid, or chloral may be added to allay the itching.

The prophylaxis of the disease includes education of the people in the infected area about the danger of fermented maize as an article of food. Maize should only be harvested when ripe, and should be stored in dry, well ventilated granaries. When it is an article of import it should be rigorously inspected at the first port of entry, and all spoiled or damaged grain rejected.

1456 *Rivermont Ave.*

Correspondence.

Is Western Corn Cause of Pellagra?

Mr. Editor:—Much has been written recently about pellagra, not only in the medical journals, but also in the newspapers and literary magazines, and they all, with one accord, proclaim that bread made from moulded corn meal is its cause; and I believe that all those who have investigated the disease also believe that moulded corn is the cause of it. But as far as I have seen, no one has given a solution of its prevalence at this time, or has explained why it has not occurred before now, although we have been eating cornbread for more than two hundred years, and the negroes have lived on it almost exclusively for that length of time.

It is the purpose of this article to deal alone with its etiology in regard to the present outbreak. Nor do I intend to write any exhaustive treatise upon the subject, but only to present a theory and give some facts in support of it.

We have had recently a good many very wet years, and especially the summers and autumns which favored the moulding of corn. This may be thought by some sufficient cause to account for the prevalence of pellagra at this time. But we have had rainy years before, with all the present conditions, and no pellagra. And then, too, our farmers have always taken great care in handling their corn to keep it sound. It has always been a custom in this county for farmers to assort their corn while shucking it. The immature and damaged corn was thrown into one pile and the sound corn into another. The immature or damaged corn was always fed out to hogs immediately, and only the sound corn kept for future commercial use. And if the sound corn happened to be damp or wet it was put into high rail pens in the yard and covered with shucks or wheat straw, where it remained until the winter's winds had blown through it day after day and dried it out thoroughly before it was ever allowed to go into the corn bin; thus our farmers kept their corn sound and sweet, and only this corn was used for bread, and we had no cause for pellagra.

But a very different condition confronts us to-day—one which has existed now for five or six years; and one, too, if our theory of the cause of pellagra be true, fraught with danger and potent for evil. I refer to the large importation of Western corn to this section. Corn gathered from large fields of the West before it is thoroughly mature and dry, and shipped in this condition to be heaped in immense granaries or elevators, where it heats and moulds; and then is shipped in close cars to the East, where it arrives totally unfit for use. Reliable Western farmers, who have purchased

homes in this section, say that for years now, the Western farmers, to get the advantage of the early market, have been getting in and shipping their corn before it was mature and dry. I don't know to what extent this has been done. But, judging from the condition of corn received in this county, it must have been extensive. All Western corn has a mouldy smell when it arrives here, and horses don't eat it until forced to by hunger. Country horses that haul tobacco to town won't eat the corn fed to them in the city stables, presumably Western corn.

But I write to refer especially to corn received in this county in 1907 and 1908. It was worse then than I had ever seen it before. This corn was totally unfit for horses, much less for man. Some of it was so bad that horses that had been trained to eat Western corn refused to eat this. Much bad corn was ground at the mills and sold to the country stores where it was retailed out to saw-mill hands and contiguous country people. Millers said it was impossible to get a carload of good corn at this time. The condition of the country at this time, too, made it necessary to import large quantities of Western corn.

The high prices of timber flooded the country with saw-mills, and a large portion of the farm labor flocked to the saw-mills because they could get cash money and higher wages. As a natural consequence the farm was neglected, and little corn was raised. And Western corn has been imported to a much larger extent than formerly to feed the teams and men who were no longer producers of corn, but consumers only. It has been estimated that more than one thousand men and as many horses and mules were engaged in the timber business at one time in this county alone. So many people who had previously eaten no corn bread except that ground from Virginia corn, now ate bread ground from Western corn.

It is only since Western corn has come into such general use that we have had pellagra, and if moulded corn bread is the cause of pellagra, can anyone find a more favorable condition for its production? Here you have all the conditions which favor the production of pellagra. And, too, conditions that never existed before in this section, I do not believe there was ever a case of pellagra from eating Virginia corn, or any corn that is consumed where grown. Bread from home-grown corn is the best bread on earth, and far more nutritious than wheat bread, since by this new process all the gluten has been removed from the wheat.

If moulded corn is the only cause, too, pellagra cannot be contagious; it cannot be epidemic. It cannot be imported. It must start and stop with the cause. I had as soon look for an epidemic of belly-ache from eating green apples.

Is it not possible that the long prevalence of pellagra in some foreign countries is due to using meal from imported corn? Whether my theory is right or not, the condition of the corn shipped to this county from the West in the last few years deserves the attention of our Health Board and our Legislature.

P. T. Southall, M. D.

Amelia, Va.

Book Notices.

Practical Medicine Series. Under General Editorial Charge of GUSTAVUS P. HEAD, M. D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Volume VIII. Materia Medica and Therapeutics, Preventive Medicine; Climatology. Edited by GEORGE F. BUTLER, Ph. G., M. D., HENRY B. FAVILL, A. B., M. D., NORMAN BRIDGE, A. M., M. D. $1.50. Volume IX. Skin and Venereal Diseases—Miscellaneous Topics. Edited by W. L. BAUM, M. D., HAROLD N. MOYER, M. D. $1.25. Series 1909. Chicago. Year Book Publishers. 12mo. Cloth. Series of Ten Volumes a year, as one subscription, $10.

As so often stated in these pages, this is a valuable annual series for any practitioner—during each year covering advances in the whole range of subjects discussed. While annual subscription for the ten volumes a year is $10, each volume has its own price.

Volume VIII., devotes over 200 pages to Materia Medica and Therapeutics; nearly 100 pages of Preventive Medicine and about 22 pages to Climatology as adapted to various diseases and conditions.

In Volume IX. 137 pages are given to advances in Skin Diseases; while the remainder of the book—about 100 pages—are devoted to Miscellaneous Topics—such as Heredity, Autoprotective Mechanism of the Animal Body, Parasitism, Physical Degeneration, Smoking, Alcoholism.

Biographical Clinics. Vol. VII. By GEORGE M. GOULD, M. D, Formerly Editor "American Medicine," etc. Philadelphia. P. Blakiston's Son & Co. 1909. 12mo. 492 pages. Cloth. Gilt top. $1 net.

We have before expressed our dislike of a book sent out with uncut pages—however profitably readable may be its text. This volume contains "essays concerning the influence of the visual function, pathological and physiologic, upon the health of patients." It is in no sense a text-book, but gives, at random, as it were, many facts and suggestions relative to the influence of sight upon health, which are both instructive and useful. It is a book rather for the leisure hour than for consecutive study. It seems strange that a book by so eminent an authority as Dr. Gould has to be written to controvert the false doctrines of some prominent writers that eye-strain, etc., has little to do with the causation of many important diseased conditions, and that the optician is sufficient for all purposes to prevent eye-strain, etc.

Practical Study of Malaria. By WILLIAM H. DEADERICK, M. D., President Tri-State Medical Society; Member American Society of Tropical Medicine, etc. Fully Illustrated. Philadelphia and London. W. B. Saunders Co. 1909. 8vo. 402 pages. Cloth, $4.50 net; half Morocco, $6 net.

Since the discovery by the late Maj. Ross of the relationship of the mosquito (anopheles) to the causation of malarial diseases, and the subsequent literature confirmatory thereof, one would have thought the subject a finished chapter, except, perhaps, as to the misnomer of malaria, due to that species of the mosquito known as anopheles. A better term might be "anophelesis," as suggested by Dr. Robertson. Dr. Deaderick's book is a most thorough review of the whole subject, using illustrations wherever necessary, and the section on therapeutics is excellent. Perhaps he thinks, some anti-malarial sera or vaccine may be discovered in the hereafter as a prophylactic, but as yet all experimental observations in that direction have been unsatisfactory. It is a practical, valuable book for the practitioner who resides in what are known as malarial sections.

Text-Boox on the Pathogenic Bacteria. By JOSEPH McFARLAND, M. D., Professor of Pathology and Bacteriology, Medico-Chirurgical College, Philadelphia, etc. With 211 Illustrations, a number of them in colors. Sixth Edition, Thoroughly Revised. Philadelphia and London: W. B. Saunders & Co. 1909. 8vo. 709 pages. Cloth. $3.50 net.

The author met a demand when he designed this book, which has been kept thoroughly revised, and made more and more useful to student and practitioner with each revision. It deals almost exclusively with those bacteria known to produce diseases, gives their history, how they enter the system, etc. No one who undertakes the scientific study of the infections generally can well do without a book of this character, and of the several works on the subject. This book appears to be about the best of its kind as a most decided help in the understanding of the role of pathogenic bacteria.

Editorial.

Pay Relationship Between Patient and Doctor.

Some people are curious in that they are willing to impose upon the generosity of others when they themselves should be generous—certainly deal fairly and squarely. Time and again have we known of patients able to pay for medical attendance to allow their bills to accumulate into relatively large sums, instead of paying something on account from time to time; and then after such long waiting ask the doctor to deduct something for cash when, in reality, legal interest should be added to the doctor's account. It is a common trick, after a bill becomes large with one doctor, that the patient then calls in another, and the same thing is repeated as to the accumulated bill. Of course, such a course on the part of some is dishonest. Mercantile men are not usually so treated; they adopt from the beginning of a credit account a business-like way of collecting and blacklisting; so that if they have been imposed upon by parties, hereafter cash is required for the purchase.

Doctors, as a rule, instead of demanding at least monthly settlements of accounts, take any statement on the part of the patron as an excuse for not paying something on account. The patient states that he has to pay this, that and the other bill first, and when he gets through with them he will pay the doctor something on account. But while he is preparing to pay these, other necessary bills accumulate; so that

these also have to be paid before the doctor's account is reached, and by this time further debts have accumulated which he has to pay before the doctor's account is again reached. And so it goes, until infirmities afflict the doctor, when he himself stands in great need of funds to take care of self and family. When he appeals to such old patrons for payment, then they claim the statute of limitation as to the old debts; and so the old doctors live in need of the necessities of life and die poverty stricken.

We recall many such cases in various communities. People are willing enough to accord to such or such a doctor a good name. "He was so charitable," they say; but never once do they seriously consider the monetary debts they owe him or the dependent family.

We wish we could by these remarks instill the carrying out of proper business habits by the younger generation of doctors. We would not have them to be unkind or inattentive to the poor and the needy. But there is a class above these who can and do meet every other obligation except that to the doctor. It is this class of patients who should be made to pay something for medical services rendered. When the doctor does not get this little, the merchant does; and the doctor is as much entitled to his part as others. Use proper business judgment in the systematic collection of bills for professional services rendered.

In this day, the doctor requires a certain amount of capital to run his business side of life as others. Besides his home expenses, his changes of suits of clothes, his conveyance expenses—whether horse and buggy or automobile, etc.,—he should be able to keep up his files of journals, books, etc. He should be able to equip himself with instruments demanded in practice, with appliances to meet emergencies, microscope, means for various diagnostic purposes, etc. A thousand dollars of such things as an outlay, if he has to sell them, will bring scarcely a twentieth part of what he paid for them; for improvements in such things are constantly being made which require purchase, and the throwing away as rubbish what he had.

We had occasion a short while ago to make an estimate of a medical library alone accumulated through some years at an original cost of over $5,000, and were surprised to note that its selling price to-day would not exceed $500. So it is with electrical machines, surgical and other instruments, various appliances for the proper practice of medicine, etc., which practically, on the death of the doctor, have to be dumped into the junk pile.

The day has passed when the doctor who expects to secure practice can live in a shanty, or can afford to dress shabbily, etc. People of means want as their doctor one they recognize as properly equipped for practice—all of which costs money. Hence, we earnestly entreat the oncoming generation of doctors to charge properly for their services. While being always considerate of the honest poor patron, do not fail to charge sufficiently for services rendered the well-to-do.

Medical professional services, properly rendered, cannot always be made to conform to any definite tariff of fees. Such tariff tables can only be used as general guides. When the truly faithful doctor renders bills to millionaires, he has a right to expect full compensation. He lowers his professional standing with such patrons when he makes simply an ordinary tariff rate. We will never forget an instance which occurred in our practice some years ago when a millionaire called us in to pay him a professional visit. As he wanted to leave on an early train, he asked for the bill. Modestly, $2 was suggested as the amount, in keeping with the local tariff fees. He pulled out a roll of money and handed us a $10 bill. When we suggested that we would have to go out to get the change, he stated in a disgusted manner that he had not asked for any. This patient, on his return to the city, called in another doctor—evidently classing us as a second or third rate doctor. Such patients are in the habit of securing the best as to what they want, and class clothing, houses, doctors, etc., as to the amounts they have to pay for them. Of course, such cases are the exception to the rule of practice, but such exceptions should be remembered. Charge sufficiently for services rendered the wealthy; charge moderately for services rendered patients in moderate circumstances. Be always considerate of the poor and needy.

Chiropractic Bill Defeated in Virginia.

A Senate bill to regulate the practice of chiropractice in the State of Virginia, and to provide for a board of chiropractic examiners,

and to license chiropractors to practice in this State, and to punish persons violating the provisions of the proposed act was ingloriously defeated during the first of March. Chiropractice is defined in the bill as "being the science of adjusting by hand any or all luxations of the three hundred articular joints of the human body, more especially the fifty-two articulations of the spinal column for the purpose of freeing any or all impinged nerves which cause deranged functions." The bill did not authorize a chiropractic "to prescribe or use drugs, nor to perform major surgery"; nor did it propose "to prohibit, infringe upon, or interfere with any other method or science of healing in this State, or practitioners of chiropractic now in practice in this State." "The science of adjusting luxations by hand and chiropractic for the cure of diseases is * * * declared not to be the practice of medicine, surgery or osteopathy."

Mettauer Medical Society

Is the name given the medical society recently organized at Farmville, Va., in memory of Drs. John P. and Joseph Mettauer, of Prince Edward county, at one time two of the country's most noted surgeons. The Society is composed of doctors of Prince Edward and adjacent counties, which includes districts where it is practically impossible to have a distinct county society.

The following officers were elected: President, Dr. Peter Winston, Farmville; Vice-Presidents, Drs. Waller M. Holladay, Hampden-Sidney; William E. Brown, Sheppards; Carter Weisiger, Cumberland; James B. Abbitt, Appomattox; T. M. Baird, Crewe; William E. Anderson, Farmville; Secretary-Treasurer, Dr. William J. Gills, Farmville. The next meeting of the Society will be held in Farmville on April 19th.

The American Journal of Physiologic Therapeutics

Is a new periodical which is shortly to be published bi-monthly at 72 Madison street, Chicago, Ill. This journal intends to devote its pages to the delineation of the progress made in the various forms of Physiologic Therapeutics, including Hydrotherapy, Electrotherapy, Massage, Hyperemia, etc. We extend to the editorial staff our congratulations.

Virginia Health Bulletin.

Dr. Ennion G. Williams, Commissioner of Health, has combined the January and February numbers of the *Bulletin* in making his annual report for 1909. It gives an outline of the work done by this department, and Dr. Williams and his able assistants should be congratulated on the efficiency of their work.

The Ashland Convalescent Sanitarium

Has recently purchased and moved into its new home, which is an ideal place for rest and quiet. It is an attractive place of over five acres on the suburbs, and in the best residential part of the village. We wish them continued success.

The Second International Congress of Alimentary Hygiene and of the Rational Feeding of Man

Will be held in Brussels, October 4-8, 1910. Dr. H. W. Wiley, Cosmos Club, Washington, D. C., who represents the American Committee, will be glad to furnish further information.

W. B. Saunders Co.,

Medical publishers, of Philadelphia and London, have just issued the thirteenth edition of their handsome illustrated catalogue of medical books. A copy may be obtained from the company for the asking.

Dr. Tom A. Williams,

A prominent neurologist, of Washington, D. C., has just been elected foreign corresponding member of the Paris Neurological Society, one of the foremost of its kind in the world.

Dr. Garland P. Moore,

For a number of years a prominent physician at Cape Charles, Va., has been appointed surgeon of the Public Health and Marine Hospital Service, attached to the American Consulate in the city of Kobe, and with his family has already embarked on his journey to Japan.

Wanted—A strictly sober and industrious doctor, who has passed the Virginia State Board of Medical Examiners, for work in a lumber district. Contract and private practice will amount to about $150 to $200 per month. Address "Physician," care this journal.

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Original Communications.

THE PHYSIOLOGY OF THE ADRENALS IN ITS RELATION TO POISONING BY ADRENAL PREPARATIONS.*

By CHARLES E. DEM. SAJOUS, M. D., LL. D., Philadelphia, Pa.

Professor of Therapeutics and Pharmacology in Temple University, Philadelphia.

You will perhaps remember that as recently as last year, Sollman, whose labors as a pharmacologist are well known, wrote:[1] "A generation ago therapeutics was an art, promising to develop into a science. At present it cannot be classed as an art, nor as a science; it can only be classed as a confusion." In an article published soon as this statement appeared, I submitted what, to me at least, appeared to be the underlying cause of this deplorable state of affairs. Without in any way undervaluing the vast contributions of physiologists to our knowledge, I urged that many of the problems which they have admittedly been unable to solve paralyzed correspondingly our progress in pharmacology. Thus, to explain the action of tonics and alteratives a clear conception of the process of metabolism is necessary: Foster tells us that the prevailing knowledge on this question "consists mostly of guesses and gaps." To account logically for the action of cardiants, we should clearly understand how the heart's action is inhibited: Langley states that "we are still far from any real knowledge of the processes involved in inhibition." Vaso-dilation is the leading factor in the action of sialogogues and diaphoretics: Chapman tells us that "though numerous explanations have been offered of the manner in which the vaso-dilator nerves act, it must be admitted that none of them is satisfactory." The action of hypnotics and anesthetics imposes a clear understanding of the production of sleep: Bradbury states that "this phenomenon is enveloped in mystery." Nerve sedatives or stimulants and analgesics modify in some way the sensory-nerve impulse: as Stewart says: "What the nerve-impulse actually consists in we do not know." Convulsivants and antispasmodics are intimately linked with muscular oxidation: but Laulanie writes: "We are absolutely ignorant of the mechanism of oxidation." These and many other examples I could furnish paralyze progress in our knowledge of the physiological action not merely of a few drugs, but of all. Hence the confusion into which therapeutics has fallen.

May we hope that it will be redeemed from this position? I cannot but submit the personal conviction that the physiological action of drugs, the truly scientific phase of therapeutics will remain in its present condition as long as pharmacologists will depend entirely upon physiologists for the elucidation of function. One of the most brilliant physiologists of our day, Professor Pawlow, of St. Petersburg, wrote a few years ago,[2] after stating that physicians had pointed out the existence of gastric secretory nerves—a question which, I may add, thanks to his own labors, has been greatly elucidated—remarks: "Physiologists, on the other hand, had fruitlessly endeavored for decades to arrive at definite results upon this question. This is a striking, but by no means isolated, instance where the physician gives a more correct verdict concerning physiological processes than the physiologist himself; nor is it indeed strange. The world of pathological phenomena is nothing but an endless series of the most different and unusual combinations of physiological occurrences which never make their appearance in the normal course of life. It is a series of physiological experiments which nature and life institute, often with such an interlinking of events as could never enter into the mind of the present-day physiologist, and which could

*Read by invitation before the James Aitken Meigs Society, December 16, 1909.

scarcely be called into existence by means of the technical resources at our command. Clinical observation will consequently always remain a rich mine of physiological facts." The close attention it has been my lot to give to every branch of medical literature has enabled me fully to appreciate the strength of this assertion. It has also led me, moreover, to realize that facts brought out through morbid physiology, if I may so call the phenomena of exaggerated or inhibited functional activity witnessed when any organ is the seat of disease, are practically a *sine qua non* when the function of that organ is to be determined. It is mainly because they are deprived of this potent aid (owing mainly to the vast field pure physiology alone covers nowadays), that physiologists have failed to explain the functions enumerated and many others. A few years ago[3] I suggested that we needed a special class of medical investigators, men well prepared in the various subdivisions of medicine, to analyze with care and submit to experimental and clinical analysis, the phenomena which in clinical medicine and other branches might prove of service in the elucidation of physiological problems. The labors of such workers carried on in harmony with the valuable work constantly being done by physiologists, could not but afford many clues and, perhaps, bear ripe fruit.

It is an effort in this direction that my own labors represent, and to emphasize the need of such work, I will submit to you one of the most deplorable consequences of the prevailing confusion concerning the physiological action of drugs—deaths caused by remedies administered which would unquestionably have been avoided if evidence alone discernible through clinical channels had been available.

Text-books of physiology and of therapeutics teach that the secretion of the adrenals and their representatives, the adrenal preparations, elevate the blood pressure by causing vaso-constriction, slow the heart by stimulating the vagus, and increase the contractility of the cardiac muscle. Several instances of poisoning have shown that these phenomena do not afford an adequate conception of their physiological action.

In a recent study of the value of adrenal preparations in Addison's disease, I came across several cases in which death could clearly be traced to the remedial measures employed. E. W. Adams[4] refers to a group of seven cases reported in which he says: "Alarming or fatal results were presumably or possibly due to treatment." One of the two instances of alarming collapse, "began to improve markedly," remarks one of the original authors, "when the extract was stopped." A surgeon after grafting the suprarenals of a dog into the cellular tissue of the abdomen in a child of fourteen years, witnessed its death in three days. Another,[5] having resorted to the same method in two cases, lost both within twenty-four hours, owing, he honestly admits, to the operation. The same result followed in a fourth case. Referring to three of these instances, the last observer, emphasizing the fact that no infection of the wound had occurred, writes: 'In the three cases the results were disastrous. In my own case the patient died in twenty-four hours with a formidable hyperthermia and cardiac collapse."

Why this *formidable* rise of temperature? Physiological text-books make no reference to this symptom, and it is not explained by the familiar rise of blood-pressure, the slowing and increased contractile power of the heart. Had physiology and clinical medicine worked hand in hand to unravel physiological mysteries, physiologists would have emphasized this phenomenon first noted by Oliver and Schafer[6] after it had been shown by Lepine[7] that the characteristic clinical effects of adrenal preparations always include a rise of temperature. Additional evidence to this effect, and pointing directly to its source, is the hyperpyrexia observed, at times, in the overgrowth of adrenal tissue which constitutes hypernephroma. Had the clinicians and surgeons who went through the ordeal of witnessing death from remedial measures they had instituted, been made aware by their books of reference that the temperature was influenced by the adrenals, they would have learned, by their first sacrifice to ignorance that hyperthermia was due to the excess of adrenal gland, administered or grafted. The warning would have been salutary in two directions: it would have presented the subsequent deaths from the same cause, and also the wholesale condemnation of adrenal grafting they inspired.

And it is not in this direction alone that clinical observation affords suggestive clues. How, for example, account by the prevailing teachings, for the physical overgrowth in children caused by malignant hypernephroma, a child

of five years being as large, in some instances, as one of sixteen, and showing by many concurrent phenomena that its oxidations and nutrition are being carried on at an inordinate rate? That the adrenals are the source of these phenomena is well shown by the fact that Otto, Marchand and others pointed out two decades ago, that simple hyperplasia of the adrenals caused premature development. The beautiful way in which all this harmonizes with pure physiology is illustrated by the fact that Reichert,[8] a physiologist, found that the rise of temperature caused in rabbits by adrenal preparations coincided with increased tissue metabolism and, therefore, with general nutrition. We thus have clear evidence, clinical and physiological, to the effect that in some way, and besides the familiar rise of blood-pressure and the increase of cardiac power caused by the adrenal secretion with which every one is familiar, it influences oxidation, metabolism and nutrition.

I would remain within the scope of the empirical therapeutics, which I so heartily deprecate, did I not, even briefly, analyze the process through which all these phenomena are produced. Here, however, I am obliged to refer to my own labors, since they alone afford an explanation of the manner in which oxidation, metabolism and nutrition are influenced by the adrenals.

Paul Bert over thirty years ago[9] and several other physiologists since, including Muller, Setschenow and Holmgren and Zuntz, urged that the prevailing view as to the manner in which the blood took up the oxygen from the pulmonary air was defective; that the diffusion doctrine failed to harmonize with many phenomena witnessed and that in order to account for these, the blood had to contain some substance capable of actually taking up the oxygen. Bohr,[10] Haldane and Lorrain Smith, Harley and other physiologists not only sustained this opinion experimentally, but they concluded that the reducing substance, i. e., the substance which absorbs the oxygen from the air, was presumably "a kind of internal secretion."*[11] As recently stated by a well known physiologist who acts merely as a reviewer of the whole question, Dr. Pembrey,[12] "the body of evidence has been steadily increasing in favor of the secretory theory, especially as regards the absorption of oxygen." The identity of the secretion, however, remained obscured.

*These words are quoted from an article by Bohr and Henriques.

My own researches, chemical and anatomical, having suggested that it was the secretion of the adrenals, a multitude of facts on record soon emphasized the correctness of this conclusion. Not only had many investigators found that adrenal juice or extractives were endowed with a powerful affinity for oxygen, but the blood—into which the adrenals secreted their product, the adrenal veins and inferior vena cava, inevitably carried the secretion, via the right ventricle, to the pulmonary air cells. The blood in the venous channel produced the characteristic effects of adrenal preparations, and as shown by Scymonowicz, Biedl, Salvioli and Pizzolini[13] and others, such effects could not be obtained with venous blood obtained from other parts of the body.

On the level with the air-cells, the adrenal secretion was found to present all the attributes that Paul Bert, Muller, Bohr and the other physiologists named, had concluded it should possess to meet the phenomena, the diffusion theory had failed to explain. Moreover it filled in the same location a need to which Gamgee[14] refers as the "unknown constituent of the corpuscle." Not only did I find the properties of this constituent to correspond with those of the adrenal principle, its solubility in organic solvents, its resistance to the boiling point, etc., but my conclusion was confirmed by Mulon,[15] of Paris, who found that the red corpuscles gave the histochemical reactions of the adrenal active principle.

Additional personal work, confirmed by much evidence of the strongest kind in literature, but for which I must refer you elsewhere[16] then showed that the adrenal principle was not only a constituent of the hemoglobin, but the component of this substance which served to transfer to the tissues the oxygen it had taken up in the lungs. In other words, from my viewpoint, it acted as a catalyzer. Now, Poehl, of St. Petersburg, has shown that the adrenal principle *is* a catalyzer, though unaware of the relationship with tissue oxidation I have ascribed to it, while Jolles [17] found that the activity of a given volume of blood as a catalyser corresponded with the number of red corpuscles it contained. All this filled another gap which the prevailing doctrine of pulmonary and tissue respiration had failed to bridge, to wit: The fact pointed out by Traube in 1853 that hemoglobin could not fulfill the physiochemical functions ascribed to it without the aid of a

catalyzer. The participation of the adrenal product in so general and widespread a function as tissue metabolism necessitated its presence throughout the entire organism. This has been established beyond a doubt by various observers.

Physiological evidence, interpreted from my viewpoint, thus harmonizes perfectly with clinical observation. The rise of temperature caused by adrenal preparations, hypernephroma, and adrenal hyperplasia, find their normal explanation in the influence the adrenal principle has on general oxidation. We have here the explanation of the "formidable hyperpyrexia," caused by the grafting of two adrenals in each patient—a result readily accounted for when we recall that Takamine found that 1-200,000 grain of adrenalin sufficed to produce physiological effects. As Howell states[18] "the physiological exudations of the body cannot be separated from the general metabolic phenomena of the tissues." In the influence on general metabolism and nutrition I attribute to the adrenal secretion, we have not only a verification of this conclusion but also an explanation for the physical overgrowth observed in children in conditions such as hypernephroma, in which there exists an excess of adrenal tissue.

Besides—and I must lay stress on the fact that this in itself represents conclusive testimony as to the strength of my position—the influence of the adrenals on oxidation enables us to account for and explain, all the toxic phenomena that excessive doses of adrenal preparations awaken. Tracing the course of events from start to finish we have, at first, as effects of exaggerated tissue metabolism:—in the tissues, *a rise of temperature;* in the cerebrospinal system, *excitement;* in the muscles, *tremor;* in the kidneys, *polyuria;* in the myocardium, *violent palpitations;* in the muscular coats of vessels, *rise of blood-pressure.* As the blood-pressure increases, passive pulmonary congestion occurs, causing *dyspnea,* and at times, *pulmonary edema.* As the vascular constriction becomes still greater, the pressure in the aorta becomes so marked that *substernal pain* is experienced, and the pulmonary circulation being blocked, *air-hunger* and *asphyxia* follow—the heart, in most instances of poisoning, continuing to beat a short time after respiration has ceased. When the intoxication is sudden, as recently observed in several instances of death in which adrenalin chloride had been injected directly into the tissues prior to operations, the active principle may cause, especially in robust subjects, such violent constriction of the arterioles, that the circulation in the various organs, is blocked; the heart being one of these, its walls receive too little blood to sustain its functions and it ceases to contract.*

On the whole, these few facts indicate: (1) That adrenal preparations do not merely raise the blood pressure, slow the heart and increase its contractile power as is now taught, but that they also influence actively the general oxidations, metabolism and nutrition; and (2) that these effects should be taken into account when adrenal preparations or adrenal grafting are employed, in order to prevent recurrence of the fatal results that the prevailing inadequate conception of their physiological action involves.

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2043 *Walnut Street.*

Convention Eighth (Va.) District Doctors.

Members of the Medical Society of Virginia residing in the Eighth Congressional Dijstrict will meet in Nichols' Hall, Manassas, Va., at 10.30 o'clock, May 18, 1910, to nominate a Councilor to represent this District in the Executive Council of the Society. The Medical Society of Northern Virginia will hold its regular meeting at the same time and place.

*I would suggest that amyl nitrite, which promptly dilates the arterioles, be tried (by inhalation) in these cases. I consider it and also the nitrites, including nitroglycerin, the normal antidotes of the adrenal principle.

INTRACAPSULAR FRACTURE OF THE HIP: PROGNOSIS AND REPORT OF CASES.*

By JOHN N. UPSHUR, M. D., Richmond, Va.

Ex-President and Honorary Fellow of the Richmond Academy of Medicine and Surgery, of the Medical Society of Virginia, of the Tri-State Medical Association of the Carolinas and Virginia; Honorary Fellow of the Medical Society of West Virginia, etc., etc.,

The writer does not pose as a surgeon nor claim to be an authority on surgical subjects; and yet, during an experience of many years it has fallen to his lot to see many and varied surgical cases and to have them under his care. Specialism being a development of recent years, at the time he was educated and for many years subsequent, equal emphasis was laid upon every variety of malady and injury; and the thoroughly equipped doctor was supposed to treat intelligently whatever condition came under his observation. Therefore, in the discussion of this subject, he proposes to treat it from the practical standpoint of clinical observation and results.

For an intelligent comprehension of the subject, it is essential that we have a clear conception of the histology of the bone and anatomy of the region of the hip. "The ossific center appears in the head of the bone at the end of the first year; in the greater trochanter in the fourth year and in the lesser trochanter between the thirteenth and fourteenth years." "The junction of the epiphysis with the shaft does not begin until after puberty and is not complete until the twentieth year." "The arrangement of the cancelli in the ends of the femur is remarkable. In the upper end this is in two sets. In the first they are placed in the direction of greatest pressure and serve to support the vertical weight of the body. The second set are planes of lamellae intersecting the former nearly at right angles and are situated in the line of greatest tension, i. e., along the lines in which the muscles and ligaments exert their traction. In the midst of the cancellous tissue of the neck is a vertical plane of compact tissue, the femoral spur, which commences at the point where the neck joins the shaft midway between the lesser trochanter and the internal border of the shaft of the bone, and extends in the direction of the digital fossa." This is in the direct axis of the shaft, materially strengthening the bone. Again, "it will be noticed that a considerable portion of the great trochanter lies behind the level of the posterior surface of the neck; * * * and the posterior wall of the neck is prolonged into the trochanter." "It forms a thin, dense plate of bone which passes beneath the posterior intertrochanteric towards the outer surface of the bone." As to the angle of the neck of the femur "it varies in length and obliquity at different periods in life * * * being widest in infancy. In the adult it forms an angle of about 130 degrees with the shaft, but varies in inverse proportion to the development of the pelvis and the stature. In the female, in consequence of the prominence of the hips and widening of the pelvis, the neck of the femur forms more nearly a right angle with the shaft, than in man." (Gray). It has been stated that the angle diminishes in old age, though this is open to question; but the angle varies greatly in different persons of the same age.

The ligaments of the hip-joint are the capsular, iliofemoral, teres, cotyloid and transverse. The capsular ligament is a closed sac strengthened anteriorly by its attachment to the outer margin of this ligament. It is thicker at the upper, anterior portion of the joint where greatest resistance is required. Below and internally, it is loose and thinner. The iliofemoral is an accessory band of fibres passing across the front of the joint and serving to strengthen it. The synovial membrane is very extensive, covering all that portion of the neck contained within the joint.

The muscles in relation with the joint are, in front, psoas and iliacus; above, the reflected head of the rectus and the gluteus minimus; internally, the obturator externus and pectineus; posteriorly, the pyriformis, gemellus superior, obturator internus, gemellus inferior, obturator externus and quadratus femoris.

Causes. A careful consideration of the anatomy of the joint will demonstrate that two classes are predisposed to intracapsular injury —the young subject up to the age of twenty years, because of the late development of this portion of the bone and the consolidated ossific union; and the old subject, fifty years and over, increasing predisposition because of advancing age. These are important facts to bear in mind because of the bearing on diagnosis. Fracture in the young subject is very rare but, we must not forget, may occur; and I believe diagnosis is much more difficult here, especially

*Read before the Richmond Academy of Medicine and Surgery, November 23, 1909.

when the aid of the X-rays is not accessible at the time.

The number occurring after fifty is so great in proportion to that of the young that when the accident happens in the latter it is always a matter of surprise and comment—so rare, indeed, that little is said about it in the books.

In those advanced in life, when the anatomical conditions have undergone the changes incident to age, especially from the histologic standpoint, and change in the elements in the composition of bone has taken place, the accident may happen from the simplest cause—muscular contraction, a trip in the carpet, or in sitting down too suddenly, or even from the weight of the body on the trochanter.

Symptoms and Diagnosis. The diagnosis is usually easy: Shortening, deformity of the hip, inversion of the foot, preternatural mobility and pain. The last may be intense or excruciating or it may be very insignificant or entirely absent. On the other hand, if the injury has occurred in a young subject there may be no symptoms but pain; and the most careful examination even under complete anesthesia may, in the experience of the best men, leave the diagnosis in doubt, the X-ray only solving the problem.

If the fracture be impacted there may, probably will be preternatural fixedness in the joint.

Prognosis. The danger of the injury should be fully appreciated, and if the subject be fifty or over, in proportion to the advance in age, should the prognosis be very guarded even though the patient be doing very well and the outlook appear favorable. I would emphasize the fact that a serious phase may be put on the case any time after the tenth day and a fatal termination may result. Even in the young subject emphasis should be given to the prognosis of recovery with more or less shortening and impairment of the function of the joint, making these facts clear to those interested. Even when this is done, as a result of unreasonableness, bad advice from friends, or the kindly assistance of some doctor with an obtuse sense of his duty to his profession and regard for a brother practitioner, the attendant may find himself forced to face a suit for damages; and even though he may successfully defend his treatment and non-suit the plaintiff, it will not relieve him from the injustice and outrage of having to pay a legal fee.

As to *treatment* of these cases, the most common is a simple Buck's extension and support by sand bags. This may not fulfill the indications and resort must be had to a Smith anterior splint, or simple rest in bed and support by pillows. A very satisfactory method is a modification of Buck's by which counter-extension is made by a broad band passed around the upper third of the thigh, extension being made by a pulley so arranged that the direction will be outwards, upwards and backwards.

The following cases are illustrative of the points I have endeavored to bring out.

Case I. Mrs. W., age 50, had a fall from the rear end of a wagon fracturing neck of femur within the capsule. Had all the cardinal symptoms of the injury. Treated by Buck's extension, recovery complete with shortening of over two inches; was very lame but walked comfortably with crutch. Lived more than 15 years afterwards, dying, I understand, with Bright's.

Case II. Mrs. G., age 74, of fair health for her age, was thrown backwards by premature starting of a mule car before she was seated, fracturing her hip within capsule; all cardinal symptoms present. Treated by Buck's extension. The accident happened May 11th and she died July 29th. Her executor received damages from the street car company. There was in this case a condition of progressive depression from the time of injury. After hot weather set in, diarrhea developed and proved to be intractable from the beginning.

Case III. Rev. —, aged 79, of fine physique, 6 ft., 2 in. in height; health had not been good for many years before injury. Fractured hip in act of walking across the floor; usual symptoms present except that pain was unusually acute and no relief came, until Smith's anterior splint was applied; but though there was no pain on the injured side, that in the uninjured limb was excruciating for several days. Progress of the case uneventful for about 18 days; then there was increasing weakness; about 24 days after injury mind began to wander and he became unconscious and died on the 28th day after injury.

Case IV. Mrs. B., aged 84, fell down three steps fracturing her hip. Protracted but uneventful progress of the case; she lived for ten years afterwards but never walked again. It was remarkable that she should have done so well as she was treated at home and under the most unfavorable circumstances.

Case V. Mrs. H., aged 53, of New York, a

guest of the Jefferson Hotel, was just behind her niece going out of the Main street entrance, when the wind blowing in the swinging door, her neice stepped back to avoid being struck, bumping against her, causing a slight twist of her body and fracture of the neck of the femur without throwing her down. The previous history of this patient was bad. In the preceding six years both breasts had been removed for cancer, and she had taken no end of treatment along all known preventive lines to avoid recurrence of the disease. Dr. Stuart McGuire was called in consultation and attended this case with me. An adverse prognosis was given in the beginning and I expressed the opinion, in which Dr. McGuire agreed, that there would never be any repair and that she would not live six months. At the end of four weeks, was removed to Oyster Bay, N. Y., traveling by sea, and died at the end of four and a half months from the time of injury.

Case VI. Boy, age 16, was leading one horse and riding another when the led horse broke away. In going after it, he was thrown over the head of the horse he was riding. I saw him about an hour afterwards. There was no symptom but pain in the hip. He was carefully examined under the influence of an anesthetic by every known method except the X-ray, which was not used for the reason that there was no electrictiy in the house; and further, as the accurate diagnosis was not essential to treatment and the circumstances of the father were straightened, I desired to save him the expense. He was treated at home; at first, a Buck's apparatus applied to ensure rest of the limbs but on my visit next morning I found it a wreck. It was removed and the boy kept quiet in bed until he could sit up without pain. Sixty days after the injury he was walking about with a cane, and careful measurement did not show any shortening. About six weeks subsequently, his mother came to my office and insisted upon having a radiograph made. This was done by Dr. A. L. Gray who first, at my request, measured the limb finding a quarter of an inch shortening. The X-rays showed a fracture or, rather, a separation of the neck of the bone at its juncture with the inner side of the trochanter major of about one-eighteenth of an inch. After this, I asked Dr. Hugh Taylor to examine the boy, which he did, stating that he could not have made a better recovery under any circumstances. The boy walked upstairs without any support, one foot after another just as anyone else would do, and on a level without limping. At the time I saw this case, after much careful examination I was unable to make a diagnosis of fracture and so stated to his family; and the diagnosis was not clear until the radiograph was made.

I have been somewhat explicit in detailing this case because it is the type of those that may cause trouble to the attendant physician or surgeon. In this, because of the hope of gain, the bad advice of friends or the inspiration of the devil, a surgeon was consulted and, bolstered by his opinion, it was placed in the hands of a prominent lawyer to bring suit against me for damages. The lawyer played a strong game of bluff, but when he found I stood pat and was in for a fight to the finish, he dropped the matter and the suit was never instituted. I never got my fee for my trouble and had to pay a legal fee besides. I am constrained to believe that the matter would never have gone as far as it did if the professional brother had sat down on it when consulted about the case. I have prevented suit for damages against a doctor in better cases than this when I have been consulted.

Case VII. A lady, 89 years of age, got out bed just before day and, losing her balance, fell, striking the thigh just at the gluteo femoral fold, fracturing the neck of the bone. I saw her within an hour and recognized all of the cardinal symptoms of the injury. She experienced less shock or pain than I have ever seen in this injury. A Buck's extension was applied and the patient made comfortable. Though a woman of delicate physique, she was rarely more than indisposed. Six months prior to this accident, Dr. Stuart McGuire had removed a malignant growth from her forehead. The wound was subsequently treated with X-rays by Dr. A. L. Gray and repair was so perfect as to leave no cicatrix. The case progressed uneventfully for about fifteen days with the exception that she was very wakeful at night and, most of the time was exceedingly nervous. I had been her physician for fifteen years and had always known her to be of an exceedingly nervous temperament. In spite of the greatest care by an exceptionally good trained nurse, she developed a sore at the end of the sacrum. During the third week of her confinement, think-

ing that the sleeplessness and nervousness might be due to the constrained position on her back, I removed all the apparatus and at night turned her on her right side; the left hip was the injured one. She passed a comfortable night. The next morning, when turned on her back there was seen a spot of gangrene as large as my hand, on the outside of the thigh just above her knee, and one on the outside of the calf of the same leg. In the next few days she developed large spots of gangrene on various parts of the trunk, nor were they in any instance where there had been undue or unequal pressure. Her mind began to wander; she drifted into coma and died on the twenty-fifth day after injury. I was unable to detect any complicating disease of any internal organ. This case especially emphasizes how doubtful is the prognosis for I never saw a patient do better for the first two-thirds of the time after injury.

Remarks. In this paper I have endeavored to emphasize two facts: First, that in some cases of injury of the hip within the capsule, the best men may be in doubt as to diagnosis; and the importance of taking such precautions as will prevent a suit for damage for malpractice. Second, that intracapsular fracture of the neck of the femur in the aged is an injury of greatest gravity, and no matter how well the patient may appear to be doing, a guarded prognosis should be given.

HEADACHE.

By GEORGE L. SERVOSS, M. D., Fairview, Nevada.

Headache is a symptom which follows in the wake of many pathologic conditions. It may be due to toxemia, overwork, infectious diseases, anemia or hyperemia, diseases of the brain or its membranes, neuralgia, reflexes, the action of certain drugs, passive congestion, errors of vision or faulty elimination.

The commonest forms of headache are migraine, or sick headache, and neuralgia. Both of these are, without doubt, due to the same cause—autoinfection and faulty elimination, although the latter may be due to error of vision and consequent eye strain. When they follow infective conditions they are characterized by a feeling of heaviness or depression, accompanied by a dull pain over and about the eyes and extending to the occiput. In such cases is invariably found a foul breath. There is considerable vascular tension, with a small, contracted, hard pulse, and the skin and extremities are cold and frequently have a clammy feel. There is a contraction of the pupils. This condition continues toward the middle of the day when the face becomes flushed and the pain becomes of a throbbing character, accompanied with more or less general depression and nausea. Vomiting frequently follows and in such cases there is relief from the pain after the stomach is emptied.

When the headache is due to faulty vision the pain begins shortly after the patient arises and increases in severity until the sun reaches the zenith, when it begins to subside, usually disappearing with the setting of the sun. This pain may, or may not, be accompanied by nausea or vomiting. In such cases the nausea is reflex, and not due to infection or toxemia. The pain in such cases is usually confined to one side of the cranium, of neuralgic form, first apparent in the eye and extending over the territory supplied by the supraorbital nerve.

In infectious diseases the pain is due to the action of the process of infection, either directly from contact with the infective material or indirectly from the irritation following the formation of toxins.

In anemia, headache is due to lack of sufficient nutrition to the brain and its coverings, while in hyperemia the reverse is true. In the latter condition too much blood may be carried to the cerebrum, with consequent pressure.

In diseases of the brain and its membranes the pain is due to congestive conditions and the inflammatory process, the former causing more or less pressure.

Reflex headaches may follow numerous pathologic conditions existing in other parts of the body and may be either frontal or occipital, the latter probably being the most frequent. Women suffering from pelvic disorders are prone to reflex headaches and this symptom not infrequently appears early, at times before the real cause is recognized. This is one of the many reflex causes of headaches, the others being legion, a discussion of them being unnecessary at this time.

Neuralgic headaches are usually caused by eye strain or overwork and are either continuous or periodic, depending wholly upon the causative action.

In passive congestion, the pain is due to

pressure. The congestion may be due to many causes, and the cause should be looked after before relief can be anticipated.

Many drugs act as causative factors in the production of headaches. Among the handlers of dynamite and nitroglycerine the so-called powder headache is a frequent thing. This is due to the dilatation of the capillaries, with abnormal blood supply to the cranium. Such headaches are characterized by pain either over the frontal portion or in the occiput. In such cases there is more or less transitory constipation. The ingestion of large quantities of alcoholic liquors is frequently followed by cranial pains. This is due to the raising of the vascular tension by the direct action of the alcohol and secondarily by the inhibition of elimination, and consequent toxemia. Many other drugs cause more or less headache.

Errors of vision are usually followed by headache, due largely to the tiring of one or both of the eyes, and is usually of the neuralgic type.

Faulty elimination is undoubtedly the most common cause of headache and the symptom in such cases is due to the absorption of toxins. This may follow in the wake of many pathologic conditions and faulty organic function, or may be due wholly to constipation with retained toxins. Such headaches may be either frontal or occipital, or may extend over the entire head. They may involve only one side of the cranium; may be of neuralgic type or may be accompanied by nausea or vomiting. Toxemic headaches may be the only symptom accompanying the etiological factor, or may be one of many. The pain may be dull and with a feeling of pressure, or sharp and lancinating in character.

In the treatment of headaches the cause should receive attention in every instance, as its removal will invariably be followed by a cessation of this symptom. Autotoxemia, where no other pathologic conditions are found, should be suspected in all cases. The urine should be examined to determine its condition. If there is a hyper-acid condition, or if indican is present it is indicative of toxemia to a greater or less extent. In such cases the bowel should be cleaned out thoroughly, first by the exhibition of calomel and podophyllin, followed by salines to effect. If this does not clear the lower bowel completely, enemata should be employed. If there is a hyperacid condition, or if indican is present, a combination of sodium sulphocarbolate, grains 2 1-2; sodium sulphate, grains 5; sodium bicarbonate, grains 20; colchicine, grain 1-500; juglandin, grain 1-6; xanthoxylin, grain 1-6, with aromatics, should be given one-half to one hour before the principal meals and at bed time, until such time as there is no appearance of indican and the acidity of the urine is normal. Emetine will act as a synergist to this combination by stimulating the eliminative functions of the liver. Frequently the exhibition of the sulphocarbolates, following the clearing of the bowels, will be followed by cessation of the headache. This treatment applies largely to those headaches following the ingestion of large quantities of alcohol, following which the eliminative functions are interfered with. Powder headaches may be followed by those of faulty elimination, and sometimes toxemia and while the toxic condition, aside from that of the drug action, is not excessive, the clearing out of the bowel and keeping it clean will frequently give relief of a permanent character. In all such cases much relief is obtained by mild stimulation of the liver and bowels. Ammonium bromide has been employed with good effect in powder for headache to relieve the acute pain. In infectious diseases, anemia, hyperemia, diseases of the brain and its membranes, passive congestion and reflexes, the primary cause should be hunted out and corrected, and in such cases when the correction has been made it will be found that there will be a cessation of the headache. In error of vision, it will be frequently found that properly fitted lenses will give permanent relief.

Many practitioners have formed the habit of giving temporary relief to sufferers from this symptom without looking to the primary causative factor. The coal tars are employed as analgesics in all sorts of headaches, regardless of the conditions. . While they may, and frequently do, give relief, they are frequently contraindicated, and they may do more harm than good. Not infrequently do we find that the frequent administration of these products has been followed by the production of a habit for them, the patient feeling that he cannot get along without them. Their continued use is followed by many unpleasant conditions, among them being a weakened heart and circu-

lation, errors of vision and sometimes loss of sight. It has been found that when the habit for coal tars is once established, they must be continued, else there is a permanent headache. When a patient presents himself with a headache its character should be carefully determined and the treatment applied accordingly. If there is constipation, the bowels should be cleaned out thoroughly. In many instances this will be followed by relief. If there is vascular tension, aconitine, grain 1-134, every half hour to effect will give relief. When the skin and extremities are found cold and clammy atropine to the effect of bringing the blood to the surface, is indicated. If there is nausea, small doses of calomel at frequent intervals.

Headaches should never be considered as primary pathologic conditions, for as such, they never are. In order to effect a permanent cure, the causative factor must be determined and relieved. No physician should afford temporary relief from time to time by the administration of analgesics, as in so doing he is adding fuel to the fire and frequently augmenting the fundamental cause. Look for the cause in all cases. Correct that and the headache will take care of itself without further attention.

SURGICAL DRAINAGE.*

By LUTHER SEXTON, M. D., New Orleans, La.

Surgical drainage is the mechanical method of keeping abscess cavities emptied and infecting substances and wound secretions removed.

The exudation in fresh operations or wounds is serous at first, but may become sero-purulent and finally pus, when infected.

Small clean wounds and large surgical or accidental incised wounds, if not infected, should be closed at once without drainage.

Drainage is usually required wherever the deep aponeurotic structures and muscular sheaths or joint cavities have been opened; where much blood or large cyst content effusions are present, in urinary and gall bladder operations, in the larger amputations, as of the breast and thigh, and in removing the neck and axillary lymphatic glands.

Again, all extensively lacerated and comminuted wounds likely to become infected had best be left open or loosely packed with gauze, which gauze may be saturated with some antiseptic solution if infection is supposed to already exist in the wound.

All large sized surgical or accidental wounds with much effusion or hemorrhage should have a small piece of drainage gauze left in the most dependent portion, usually for twenty-four hours. The end of this gauze may be left protruding from under the dressing so that it may be easily removed without disturbing the super-imposed absorbing material.

Whenever infection is present at the inception of the wound or likely to occur afterwards, it is best to pack with sterilized gauze and to leave the wound open and sutures untied, which sutures have been introduced at the first dressing of the case. Large non-operative wounds should be subjected to frequent inspection, and at the first approach of sepsis all sutures should be removed and the open surfaces flooded with sterilized saline solution to facilitate drainage and removal of secretions.

Deep incised or punctured wounds should usually have their openings enlarged and some kind of drainage inserted. It should not be neglected to enlarge such wounds with small external openings to better facilitate the discharge of any serum or infection which might otherwise be pent up in the closed wound. In all injuries to subcutaneous tissue with a large hæmatoma likely to follow, it is prudent to put a stab wound into the most dependent portion to drain off the blood exudate, thus obviating all dead spaces which are but hot-beds for germ development.

Drainage material is usually composed of sterile or medicated gauze, silk worm, horse hair or cat gut, rubber tissue, strips of oil silk (the latter substance having the advantage of being easily removed). Sterilized rubber tissue with gauze longer than the tissue, with alternate layers of the gauze and rubber tissue, makes a splendid cigarette drain. Oil silk or rubber tissue may be perforated and wrapped around gauze drainage material for deep wounds into the abdominal cavity, thus facilitating their easy removal and preventing their adhesion to the peritoneum. Rubber and glass tube drains are suitable where the pus is thick and discharge abundant and likely to last a considerable length of time. The rubber tube

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has the advantage over the glass tube, in that its length can be regulated by cutting it off to suit the depth of the healing wound, but the glass tube has the advantage of being more cleanly and less likely to become infected. The glass and rubber tube are removed and gauze substituted for them as soon as possible in order to prevent the likelihood of hernia following the wound; also to promote the healing, as these hard tubes damage the granulation by pressure; they may also cause a fistula to form and in some instances have been known to slough the bowels from continued pressure; the hard glass and stiff rubber tubes act more as foreign bodies in such cases than does the more pliant antiseptic gauze dressing.

While exact rules are impossible to record, in regard to drainage, because no two cases are exactly the same, the patient's environments and resistance have something to do with the kind of drainage it is best to adopt. Occasonal operators need to use more drainage than surgeons who are constantly operating and whose technique and material is less likely to be followed by sepsis. Again, it should be remembered that in large lacerated wounds produced accidentally they are infected at the very start, though they may not necessarily suppurate if properly treated at the first dressing.

In cases of empyema, abscess of the liver, gall and urinary bladder, drainage tubes are very much preferable to gauze; it should, however, always be remembered that gauze soon becomes clogged with fibrine and does not drain pus at any time. An objection to absorbable material is that we may infect the wound that we are trying to drain with it.

Gauze drains serum, and that for a few hours only. We must never forget that lives may become imperiled by leaving large amounts of gauze in the abdominal cavity for too long a time.

In all large appendiceal abscesses it is well to wall off the wound with gauze for a time, for by so doing (as pus will not go through the gauze) we may prevent general peritoneal infection; we must also remember that irrigating wounds too often may furnish an entrance for bacteria, which we sometimes attribute to the drainage producing infection. Frequent antiseptic dressings in such cases are imperative.

Wherever there is pus, evacuate it is an axiom in surgery which might be applied as well to blood and to serum in newly made wounds as to pus in abscess cavities. Drainage, therefore, in the direction of least resistance is one of the most important aids to successful surgery. In any operation where we are not absolutely sure that there would be no oozing or secondary hemorrhage, drainage should be provided for. It is equally important in compound fractures, and in operations where the scrotum is involved, or wherever in operating a cavity or dead space is left which might fill with blood clots or serum; also in lacerated gunshot wounds and violently infected tissue. If any of these traumatic conditions exist over bony prominences where pressure can be exerted upon the underlying bony structure, the drainage is not so essential, as the oozing under such conditions may be controlled by compresses and bandaging, rendering the use of drainage unnecessary. Since the adoption of drainage in appendiceal operations where the peritoneal cavity is more or less filled with pus, mortality has been diminished 75 per cent.

We are not content in cases just enumerated with a drain in the lower edge of the incision, but stabbed wounds are made in the abdomen in the opposite side, and very often through the lumbar region as well, that no pus may be pent up to cause fever. Some of the older surgeons who adopted this plan of lumbar drainage in appendiceal abscess before the actual cause of the abscess was known had a large number of recoveries resulting from this through and through drainage into the most dependent portion of the appendiceal abscess, which, as a matter of course, had been previously walled off by peritoneal adhesion. The appendix in such cases underwent a molecular death, passing away in the pus which was so freely evacuated through this extensive opening. Gynecologists have learned to utilize the benefits of drainage through Douglas' cul-de-sac in the majority of pelvic abscesses, whether resulting from gonococci infection, or that following abortions, and other pelvic inflammations. While it is not our intention to discuss this phase of surgical drainage, the mortality from such conditions has been greatly reduced

since the rule of free evacuation and packing of the pelvic cavity with gauze has been a recognized treatment.

In amputations of the thigh or breast where large raw surfaces are necessarily produced, a small strip of gauze left in the most dependent portion of the incision for twenty-four or forty-eight hours is the saving feature and great promoter of union by first intention by permitting these exudates to drain out into the dressings rather than to form dead spaces of culture fluids in the traumatized area.

As a matter of course, in ordinary abdominal operations where no pus cavities are encountered, and where no extensive inflammatory adhesions have been broken up, it is much safer to close up these peritoneal wounds; but in cases where a large parovarian cyst has been enucleated, some provision must be made for twenty-four to forty-eight hours' drainage, for the considerable amount of effusion which follows such work. We all understand, as a matter of course, that whenever drainage tubes are kept in for a great length of time, the risk of hernia is increased; also, as said before, that drainage tubes kept in too long may act as foreign bodies, thus keeping up, instead of diminishing, the discharge of pus. If it is an ordinary effusion that is to be drained, a small strip of sterile gauze is sufficient, and perferable because blood and serum by capillary attraction are evacuated in this way; whereas, the large glass and rubber tubes, which are necessary in thick pus cases, might do harm instead of good. The perforated drainage tubes of rubber and glass are very often occluded by the blood clot, or their perforations may become blocked by folds of the intestines, thus deceiving the surgeon as to the amount of discharge present.

The criticism of the glass drainage tube in non-suppurative cases is that it fails to adapt itself to the sinuosities of the soft parts, and is unyielding in its position. In draining amputations where we do not wish to disturb the dressing for a week or more, the drainage of the stump may be accomplished, as said before, by coarse absorbable cat gut ligatures, or with silk worm and horse hair left long enough to extend out from under the bandage so that they may be removed without disturbing the other dressings in the case. In dealing with pus cases, drainage of either rubber or glass are always preferable.

CONCLUSION.

Surgical drainage is indicated in operations for stone in the bladder, violent cystitis, in enlarged prostate, in gall bladder infections, in empyema, in pyonephritis and in ulcerated and carcinomatous conditions of the stomach, and in many other conditions which the brevity of this paper will not permit us to include.

Medical Building.

THE CAUSES AND TREATMENT OF RHEUMATIC FEVER.*

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Of the many diseases characterized by serious complications and consequences acute rheumatism is one of the most important. Its frequency in children, its prolonged and painful course, and its tendency to produce permanent cardiac lesions invest it with a gravity, so far as the future of the patient is concerned, which its low mortality during the attack does not materially mitigate. The more one studies the literature of the disease, however, the more one resembles the wanderer in the labyrinth of the crystal palace. It is easy to get in, but difficult to get out. The seeker after truth finds himself in a maze of conflicting or opposing theories, especially with regard to the cause of rheumatism, but is rewarded by the thought that the large majority of clinicians are agreed at least upon the medicinal treatment. Those who assert the microbic origin of the disorder and include it amongst the infections acknowledge that a specific organism has not been discovered; yet the ranks of those who have believed the cause to be perverted metabolism, with the formation of uric acid or other chemical substances acting as irritants or toxins, are being rapidly depleted. On the other hand, Haig, the most pronounced advocate of uric acid causation, makes bold to affirm that he can produce a relapse in any case of acute rheumatism by allowing the patient a diet which will throw an excess of uric acid into the joints and other vulnerable structures. The opinions of

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men on both sides of the argument must be carefully weighed and accorded due respect. The vital point to be settled is whether the truth is held by one or both sides. To do justice to a discussion of this question would require a good deal of time, and I shall content myself with condensing into as brief a space as possible the result of my reading and observation.

Strong arguments have been advanced in support of the infectious nature of acute rheumatism. The young are most frequently affected. Epidemics occur without regular periodicity, and quite constantly during the fall and spring seasons. Attention has been called to the resemblance in the curves of the mortality statistics to those of pyemia, puerperal fever, and other infections. The clinical features are like those of pyemia. The disease appears, certainly in some instances, to be self-limited. Complications and joint involvements occur as in other infections. Leucocytosis, albuminuria, anemia, rashes and relapses are noted; and treatment has failed at times to shorten the course of the disease. A number of clinicians emphasize the foregoing facts. Poynton, Paine and others claim to have isolated a specific organism, cultures of which, when injected into the blood of rabbits, produce pelyarthritis and endocarditis. Apert, in 1898, and Wassermann, in 1899, obtained practically the same results. According to its form the microbe has been named the diplococcus or streptococcus rheumaticus. In short the large majority of observers and investigators have come to the conclusion that rheumatic fever is an infection.

Forcible and convincing as these reasons may be to some minds we are justified in the assertion that the primarily infectious nature of the disease has not been proved. In the first place, the distinctive character of the microbe has not been established nor will it be until an organism is discovered sustaining the same relation to rheumatism as other organisms do to the diseases with which they are respectively associated as specific causes. The production of multiple arthritis and endocarditis in rabbits by the injection of diplococci obtained from the blood of rheumatic patients does not prove that the animals were affected with rheumatic fever, since it is known that the same lesions may result from the injection of microbes, which are peculiar to other infections and with which the so-called diplococcus of rheumatism may be confounded. The number of microbes found in the joints and the uncertainty as to their names and life-markings make it plain that a specific germ has not been isolated. It is not surprising, therefore, that a great many observers who have discarded the uric acid and embraced the infectious theory state that the cause of rheumatic fever is unknown.

The prevalence of the disease among children and at certain seasons, the nature of the temperature curve, the resemblance of the disease to pyemia, its apparent self-limitation, and the futility of treatment in certain cases do not nullify the arguments in behalf of the metabolic theory. It might prove interesting to consider these points at length; but time is wanting and I can only commend to your thoughtful study the conclusions of Haig based upon a large number of experiments and observations extending over a long period. It is well to bear in mind that fever can occur in disorders of metabolism, and years ago Da Costa called attention to the fact that latent gout was one of the causes of so-called ephemeral fever. I have seen a marked instance of this in the case of a gentleman who had been suffering for some days with malaise and slight fever, and whom I believe to be affected with influenza, as this disease was prevailing in his family at the time. A sharp attack of gout in the big toe led to a correct diagnosis.

With regard to the self-limitation of the disease, we are familiar with the old asphorism, "six weeks in bed and then get up;" but the wide difference in this respect between rheumatism and the known infections, and the satisfactory results of appropriate treatment, do not justify, as a rule the calling of rheumatism a self-limited disease in the ordinary sense of the term. Undoubtedly there are cases which, untreated and under similar conditions, would run a more or less definite course and terminate in recovery; but the same remark would apply to gout, the self-limitation in both disorders being the result of certain factors which act in metabolic disorders as anti-toxins do in the infections.

The influence of the seasons can be explained in a great measure, by the effect of heat and cold upon cutaneous elimination; and the especial liability of children to attack can largely be accounted for by the lessened resistance of their joints and the activity of their metabolic processes.

The supposed connection between tonsilitis and rheumatic fever does not add much to the exact knowledge of the latter disease. If both disorders be due to some kind of streptococcic infection, and if tonsilitis, especially the follicular form, be one of the forerunners of rheumatism, it is remarkable how few are the cases of rheumatism in proportion to those of tonsilitis. It may be argued that the treatment of the inflamed tonsils prevents further infection; but conceding a certain amount of truth in the argument we find the number of rheumatic cases still small compared with the opportunities for systemic infection from neglected or ill-treated cases of tonsilitis. Nor does the study of chorea throw much light upon the cause of rheumatism, for we are as yet in the dark as to the chief cause of chorea; and the association of endocarditis with rheumatism, tonsilitis, or chorea is by no means a proof that all of these diseases have a common origin. Assuredly we are not justified in considering the three last mentioned disorders as different manifestations of the same microbe. The presumption of a primary and underlying perversion of metabolism would be more reasonable.

A strong believer in the infectious theory has stated that salicylic acid had never cut short a case of rheumatism; but at the present time the majority of the stoutest opposers of the metabolic theory bear testimony to the curative value of the drug, while a few claim it as a specific when judiciously administered. Some years ago I was called to see a young girl suffering with high fever and marked rheumatic involvement of most of the large joints. Her father, who was not a doctor, had lessened the pain and locked up the secretions with morphine. A calomel and saline purge was prescribed, followed by ten-grain doses of sodium salicylate every four hours. Summoned the next morning to see the patient at once, I found her wild with delirium and hallucinations. My first impression was that the brain had become involved; but the pupils were widely dilated, the temperature was declining, and the local signs had changed decidedly for the better. The salicylate was withdrawn and alkalies and sedatives substituted. The next day the patient was rational and free from pain. The fever subsided rapidly, and in a few days no traces of the disease were left. We have in this case an idiosyncrasy with regard to the drug, and unmistakable evidence of its specific and abortive action; for the effects obtained could not reasonably be attributed to the alkalies. The drug did more than merely to relieve pain and reduce fever, as it may do in other conditions. I had never seen such prompt effects before from such doses, nor have I seen them since. We are all familiar with the truth, however, that in patients of unusual susceptibility, small doses of drugs will have the same effect as larger ones in other patients.

This brings us to the main point in the argument in favor of disordered metabolism as a primary cause of rheumatic fever. One writer has stated that salicylic acid is a germicide, exerting its action upon the diplococcus in the joints, gastro-intestinal tract or blood. If so, why does it not cure pyemia, if some cases of rheumatism are due to a mild streptococcus infection? It would be difficult to convince any thoughtful observer that the limited use of the drug in the case above mentioned produced the results by any germicidal action. Acknowledging, however, that such an action were possible, how is the action of the alkalies, of colchicum, of potassium iodide, and of hot packs to be explained? Surely not on the assumption that they are germ-destroyers. Why is it that the four leading medicinal remedies used for their solvent and eliminating effects upon uric acid constitute our main reliances in the cure of rheumatic fever? I have propounded this question to a good many doctors who believe that rheumatism is an acute infection, but, so far, no satisfactory answer has been given. The only conclusion, so far as I can see it, is that the disease is primarily a disorder of uric acid metabolism.

If the views here advanced be correct, it is easy to understand the assertion on the part of certain observers that the use of salicylic acid is either conducive to relapses, or that, for some unknown reason, relapses are more apt to follow the use of the agent than that of other drugs. That the drug cures rheumatism cannot be denied. It is inconceivable, therefore, that a remedy which cures a disease can promote its recurrence. The relapse is due to the fact that more fuel is thrown into the fire to make it burn than water to put it out; or else that sufficient water is not used to extinguish the blaze. At all events it would be wise, in the absence of definite knowledge, and so long

as the patient's nutrition can be maintained on a diet which will not cause uricacidemia, to withhold those articles which are injurious in gout. By so doing we are enabled to employ smaller amounts of a drug that may cause unpleasant or even serious conditions, and attain our ends by measures which are at the same time reasonable, radical and effective.

That various microbes are found in the joints and other structures of rheumatic patients cannot be denied, nor is it improbable that the activity of these microbes have their influence upon the manifestations of the disease. In disorders of known specific microbic character the action of secondary or associated organisms is often observed, such as the effects of streptococcic infection in tuberculosis. The same remark applies to diseases in which perverted metabolism occupies the place of first importance. A striking example of this is seen in the various infections occurring in diabetes mellitus. Until the bacteriological features of rheumatism are better understood it may be best to regard the disease as caused by uricacidemia and microbes; but it logically follows if the premises in this argument be correct that disordered metabolism is the chief and primary factor in the causation.

When we reflect upon the non-contagiousness of rheumatism; upon the sterile condition of the joint effusions as found, according to Anders, in the majority of cases; upon the rare occurrence of pus; upon the marked influence of heredity; and upon the importance attached by many practitioners to a diet which, whether they intend it to be so or not, reduces uric acid production, it is difficult to escape the conviction that the specific microbe is "conspicuous by its absence." Again, what is the nature of monarticular rheumatism? Take the cases, as we frequently see them, of a wrist, elbow, ankle, or some other joint affected with heat, swelling, redness, and pain, and yielding to the usual treatment. There may, or may not, be moderate fever. The urine is often scant, deeply colored and highly acid. Administer bicarbonate of sodium in full doses, diet the patient and watch the subsidence of the ailment. What kind of microbe is it that quails in these cases before an alkali? Once more: What is sub-acute, chronic, or non-febrile rheumatism? The kinship of these states to the acute disorder cannot be disproved, but they are not included in the text-books among the infections. From the standpoint of etiology is not this an illustration of scientific inconsistency?

As regards the treatment of rheumatism, diet holds an essential, if not the most important, place. If the disease be a pure infection, it is right to allow as much stimulating proteid food as the general condition of the patient justifies. If, on the other hand, we are dealing with over-production or defective elimination of uric acid, we are prolonging the malady and endangering the patient's present and future welfare by allowing him a diet rich in nitrogen or other uric acid producers. There is a tendency at present among some of the profession to belittle the role which uric acid plays in the causation of disease. Haig may have gone to one extreme in his views but his opposers, in my opinion, have gone to the other. It is unfortunate that scientific conclusions are not born unblemished and fully developed; but, constituted as the human mind is, the pendulum must swing, in the effort to establish a truth, to both extremes before it remains quiescent in the middle. Whatever be the nature of gout and rheumatism, every practical physician realizes that they are amenable to treatment, provided the patient will carry out his instructions. But diet is not all. It is almost a matter of as much importance to open the doors by which the poison goes out as to close the doors by which it goes in. Hence, elimination must be obtained through the bowels, kidneys and skin. Sunlight, fresh air, and exercise must be used when practicable, while coincident conditions, when threatening or troublesome, must be met by appropriate measures. It is needless to enter into the details of treatment.

It seems to me that the study of the disease under consideration teaches a valuable lesson in the management of infectious diseases—and this is, that in the endeavor to fortify the system against the ravages of microbes, we are either prone to forget the underlying or associated perverted metabolism so often present, or else produce a perverted metabolism by the measures we adopt. For example, I have seen the kidneys damaged by forced feeding in tuberculosis; and toxic conditions, such as acetonuria, brought about by improper diet in typhoid fever. The practitioner is so intent upon overwhelming the microbes by food or drugs that he is liable to set up side effects

which are as injurious as the original disorder. Haig calls attention to the connection between fevers in general and uric acid metabolism, and the involvement of the joints. Scarlet fever is cited as an instance. The importance of indicanuria is properly attracting wide attention; and the more we study the subject of toxæmia resulting from imperfect gastro-intestinal or metabolic functions, the more will we be impressed with the necessity for looking at disease in all of its complex phases and addressing our remedies to every contributing factor.

5 *East Franklin Street.*

REPORT OF CASE OF REGURGITATION FROM THE BLADDER TO THE KIDNEY DURING URETERAL CATHETERIZATION.*

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J. N. O., age 57, complained of frequency of urination, unremitting day or night; occasionally there was urinary incontinence.

The patient was first seen by me June 17, 1908.

Family History.—One brother died of pulmonary tuberculosis.

Personal History.—The patient had an attack of gonorrhea in 1875, disease was of two months duration and was without complication. On his recovery he continued in good health until June, 1907. He stated that his first symptom was inability to hold his urine. Urination increased in frequency during this period until micturition occurred hourly. He reported no hematuria.

Physical Examination.—The general appearance of the patient was that of a man in fair health. Genital organs apparently normal; the prostate, however, was slightly edematous. The urine contained red blood cells, a large amount of pus, and numerous tubercle bacilli, some of which were the branching form occasionally seen in the sputum.

Cystoscopic Examination.—The bladder capacity was about 95 c. c. under forced dilation. The bladder mucosa was intensely congested over the base and universally scattered throughout the mucosa were ulcerated areas of varying size. The right ureter was found with difficulty by reason of the presence in this region of many ulcers. The lips of this ureter were everted, its orifice dilated, but its edges were not ulcerated. The ureteral catheter was entered about 5 c. m. and very purulent urine escaped, drop by drop.

Now an effort was made to locate the left ureteral opening, but sufficient fluid had leaked from the bladder to permit of its contraction to such a degree as to make the effort fruitless. The catheter was then removed from the left side of the cystoscope and 100 c. c. of sterile water injected into the bladder. When the quantity of injected fluid exceeded 95 c. c., there was noted a marked increase in the flow from the right ureteral catheter which had been left in situ. This catheter was then passed to the pelvis of the kidney—the measured length of the ureter being 33 c. m. The bladder was further distended with fluid and then again was noticed the increased flow from the ureteral catheter. It now occurred to me that possibly the fluid from the bladder was passing up the ureter to the pelvis of the kidney and returning by way of the catheter; on the other hand recognizing that a defect in the catheter might permit of leakage through its structure it was removed and examined as to its permeability under forced pressure. The eye was securely closed by means of the finger and a ureteral syringe was employed to force fluid under pressure into the tube. There was no leakage through its structure. The catheter was now readily reintroduced up to the pelvis of the right kidney. As soon as an excess of 100 c. c. of fluid was injected into the bladder there was a rush of fluid from the ureteral catheter.

I now injected into the bladder a 5 per cent. solution of argyrol. This highly colored solution immediately escaped by way of the ureteral catheter and proved conclusively that fluid passed up the dilated ureter to the pelvis of the kidney and descended through the catheter.

Later the left kidney was catheterized but no regurgitation was noticed.

The collected urine from both kidneys contained pus and tubercle bacilli; I considered the condition inoperable and consequently have had this patient on the tuberculin treatment for over a year.

My particular reason for reporting this case is that I can find in the literature no record

*Read before the American Association of Genito-Urinary Surgeons at Mt. Pocono, Pa., May, 1909.

of fluid ascending from the bladder to the pelvis of the kidney and then descending through the ureteral catheter. In my opinion this phenomenon is due to the distortion and dilation of the ureter and its orifice as a result of inflammatory processes, and I can see no reason why such a condition might not be present and thus explain on a mechanical basis the persistence of urinary fistulae, which sometimes occur after nephrectomy.

1725 *N Street, N. W.*

MANIAC-DEPRESSIVE INSANITY.*

By D. PERCY HICKLING, M. D., Washington, D. C.

Probably of all forms of insanity the manic-depressive is the one most often seen and cared for by the general practitioner and in many cases its prompt diagnosis and proper treatment will accomplish the cure without resorting to asylum or even sanitarium treatment, for it is this form of insanity that is most amenable to treatment, over 90 per cent. of the cases recovering in a comparatively short period of time, while it is also true that relapses are not infrequent, yet the intelligent care of the general practitioner with the aid of a specialist will, in my judgment, do much to prevent the reoccurrence of the attack.

It seems strange that in a condition where so much can be done so little is done, for often the energies of friends, and even physicians, are spent in efforts to gain admission for the patient into some asylum or sanitarium, while the patient's condition, as far as proper treatment is concerned, is often ignored. It is also wrong, in my judgment, to allow a manic-depressive when discharged from hospital or sanitarium to return uncared for to the very environment which contributed so largely to the attack and when the necessity for this part of the treatment is more generally recognized we will probably find that the relapses will be much less frequent.

Under the heading of manic-depressive insanity cases formerly classed as mania, melancholia, and circular insanity, as well as hypomania, hyperacute-mania and stuporous melancholia, alternating insanity, delirious mania, retardation with or without delusion, etc., are now classed, maniac-depressive insanity, being recognized under three forms—the maniacal, melancholic and mixed. The maniacal forms are recognized by the flight of ideas, psychomotor excitement, detractability, unstable delusions, hallucinations and slight clouding of consciousness.

The melancholic or depressed forms are recognized by psychomotor retardation, difficulty of thinking, absence of spontaneous activity, emotional depression (differing from the apprehensive depression of involution melancholia), impediment of thought and will hallucinations and clouding of consciousness.

The mixed forms present the combination of the above symptoms and are more severe and more difficult to diagnose than the excited or depressed forms. The excited periods may alternate with the depressed stages so that within the same day there may be several periods of depression and excitement, sometimes the period of depression may last several days or weeks followed by a period of excitement lasting a longer or shorter time, then follows the lucid interval which may last for several days, months or years, this last form constitutes the circular insanity. The cause of this form of insanity is a defective heredity which can be found in from 70 to 80 per cent. of the cases. Physical stigmata are often found, it seems to occur more frequently in women than in men, the exciting causes being gestation, alcoholic excesses, mental shock and acute diseases.

First attacks occurring generally before the twenty-fifth year, this form of insanity furnishes about 10 or 15 per cent. of all cases of insanity committed into hospitals.

There are no characteristic anatomical or pathological changes found in this disease.

Prognosis—The attacks may last a few days or several months, although some cases require several years before they recover, recovery however, being the rule. Only about 4 or 5 per cent. of the cases continue from one attack to another without interval; relapses are common and should be scrupulously guarded against. While it is true that an exciting cause very often appears to be absent after the first attack, yet care and a complete change of environment avoiding alcohol and gestation and protecting the patient as much as possible from suffering of all kinds will do much to prolong what is now termed a lucid interval. The differential diagnosis requires some care but should not be difficult, the excited and de-

*Read before the Medical Society of the Georgetown University Hospital. January 8, 1910.

pressed stages of dementia precox are easily excluded by the absence of negativism and steropty and the patient reacts well and is in touch with the environment; from paretic dementia by the physical symptoms; from hysteria and epilepsy by the duration and history and by the special symptoms which characterize the two diseases; from involution melancholia, by the age and the apprehensive depression. The mixed states most frequently lead to error in the diagnosis but can be usually recognized by careful study of the case while the history of repeated attacks makes the diagnosis certain. The treatment is of the greatest importance, first in its prophylaxis, the family physician can do much for children who have inherited weak, nervous systems, by advising proper education, proper physical exercise and suitable employment not attempting to force or coerce them in any way as well as the avoiding of alcohol in any form, their life should be free from excitement.

Those who have suffered from one attack of the disease should be compelled to lead a quiet life, free from irritation influences and refrain from the use of alcohol in any form; as complete a change as possible should be obtained from their old environment and they should be advised against marriage; they should be well nourished, seeing that their bodily weight is kept above rather than below the normal; proper sleep should be insisted upon and the hot bath at bed time often promotes sleep and reduces mental excitement and unrest. Trional, sulphonal and atropine are recommended, and if given properly and in full doses may stop a beginning attack.

When the attack is developed the treatment of course varies according to the form from which the patient suffers; in the maniacal form all kinds of external irritation should be removed, proper nursing with constant supervision every minute of the night and day must be insisted upon, the patient should be kept in bed and in the severe excitement prolonged warm baths or the hot pack are essential.

Trional, sulphonal and hyoscin, hydrobromate are of great help during the stage of excitement. Where restraint is required it should be removed as soon as possible and reapplied when necessary, where stimulants are necessary to avoid impending collapse, whiskey, camphor and brandy should be used, and where the heart is weak, caffein and digitalis should not be withheld.

Normal salt solution under the skin and by the rectum is often indicated. The nutrition of the patient is the most important, overfeed rather than under feed; milk and eggs or milk alone may be given every hour night and day while awake. When the patient refuses his food, he should be weighed each day and if the weight is falling off artificial feeding must be resorted to. The treatment must be continued until all mental symptoms disappear and until the normal weight is regained; as soon as practicable the patient should take exercise in the open air.

In the depressed stages opium or morphine is indicated, cold baths and massage are of great benefit, together with a good nutritious diet, proper amount of sleep and exercise in the open air; special attention should be paid to digestive troubles. Suggestion is of importance and should not be neglected; careful nursing supervision is as important in this as in the exciting forms of the disease and constant vigilance must be used to prevent suicide.

1304 *Rhode Island Avenue.*

ACUTE NEPHRITIS FOLLOWING A SEVERE TONSILITIS—REPORT OF CASE,

By OTIS MARSHALL, M. D., Brandy Station, Va.

September 8th, 1909, I was called to see Miss Y., age 49, who had been confined to bed for several days. When I arrived she gave me a history of having had a severe tonsilitis or diphtheria ten days previous. A physician was called in and advised antitoxin, but for some reason it was not given. In a few days the patient was able to go about and do the house work. Finding herself getting worse I was called in.

Patient was nervous and depressed. Pulse irregular and slightly increased tension, rate 110, respiration 28, temperature 102. Pain over kidney regions and tender on pressure. Did not show any swelling. Examination of urine showed it high colored, scanty, acid. Sp. Gr. 1038. Well marked ring of albumen and some bile. Patient slightly jaundiced. Menstrual history normal. The albumen increased until ppt. would be 1-2 inch to 1 inch of urine. Pain and tenderness remained. She remained practically in this condition until September

16th, when she began to improve. Albumen began to decrease, and urine became normal in quantity. Pulse and temperature and respiration gradually declined. Pulse ran as low as 60 during this period.

From September 22nd, there was no trace of albumen; and the patient was allowed to sit up in a chair for a few minutes each day, gradually lengthening the time until able to sit up an entire day. On October 2nd the patient was discharged.

Treatment—Warm baths and hot pack over loins. She was put on a milk diet with only enough egg water and broths to keep her form tiring of milk. At first she was put on strychnine 1-40 g., but later a tablet of strophanthus, digitalis and strychnine every four hours was given during periods of prostration. Ammonia and bromide were used for restlessness. For a few days we had to give codeine in half grain doses. Later spirits nitre alternating with caffeine citrate was given to increase urine, and copious draughts of water. Bowels were kept depleted by salines. After recovery, she was put on Basham's mixture.

Correspondence.

Preliminary Report of Legislative Committee of Medical Society of Virginia on Failure of Repeal of State License Taxes on Practitioners of Medicine.

Mr. Editor: It is fitting and proper that our committee should report to the members of the medical profession the results of our efforts made during the recent session of the General Assembly to secure the repeal of the special license tax. This is especially necessary since we have not kept them informed through the medium of the press. We thought it best to conduct a quiet campaign, since we felt certain that too much publicity would arouse opposition and lessen our chances for success.

Your valuable journal affords the best medium through which to make this preliminary report, and we, therefore, request space for the following statement:

It is with regret that we report another failure. This was predicted by some, who were in a position to know the state of affairs, even before the Legislature met. This opinion was based upon the fact that the finances of the State were very much crippled. This caused the question to be raised as to whether or not we shoulder enter upon the fight at all. In order to decide what was best to do in the face of such a condition, a meeting of our committee was called in Richmond during the Christmas holidays. The following doctors responded to our invitation to meet and confer with us: Drs. W. F. Drewry, Ennion G. Williams, J. N. Upshur, H. U. Stephenson and Landon B. Edwards.

The whole situation was gone over carefully and the decision reached that in view of the fact that many members of the profession had subscribed to the support of this work and were expecting us to make a fight that we should go ahead and do the best we could. This is what we have done, and while we have failed, it has not been an abject failure. Our inability to secure the repeal was due more to the financial condition of the State than to any weakness of our case. We have really gained in public favor and beyond a doubt had sufficient votes in both houses to pass our bill if it could have been brought up for consideration. That it was not brought up was due to the unfortunate fact, that it so happened that each time it was reached on the calendar they were working under a rule which allowed from one to three men to stop the consideration of any bill. Repeated efforts were made to have it brought up out of its regular order, but an antagonistic minority was able to thwart us each time.

The policy of the General Assembly seemed to be to cut down expeditures as much as possible, and reach out for new sources of revenue, hence our proposition to deprive the State of $40,000 annually, was strenuously guarded against by the financiers of both houses, regardless of the fact that we provided in our bill that it should not take effect until January 1, 1912. However, as mentioned before, the cause has been advanced. The new light in which we have presented the subject, showing the intimate relations which have come to exist between the State and the medical profession since the creation of the Department of Health, has brought many, who were formerly bitterly opposed to us, to admit that our cause is just and our arguments unanswerable. Moreover, we have been able to make our fight on a high

plain in keeping with the dignity of our profession. We feel that we have laid a solid foundation on which to build in the future, and further, that it is the right and only position for the profession to take.

The following is a brief account, somewhat in detail, of what has been done:

The Chairman of the Committee was in attendance practically all the time the Legislature was in session. Dr. H. S. MacLean, of Richmond, a member of the committee, faithfully co-operated throughout the whole campaign and rendered valuable assistance. The other members of the committee, while being in sympathy with our work, were so far removed from the center of conflict as to be unable to take an active part. The Chairman was ably assisted in presenting his arguments before the committees by Dr. E. C. Levy, Chief Health Officer of Richmond; Dr. E. G. Williams, Commissioner of Health; Dr. Allen W. Freeman, Assistant Commissioner of Health, and Dr. H. S. MacLean.

We are also greatly indebted to Hon. Don P. Halsey, our patron in the Senate, who did all in his power in our behalf, also to Senator Echols, who co-operated most earnestly with him. We owe a similar debt of gratitude to Hon. Rosewell Page and Dr. B. F. Noland, our patrons in the House.

After apearing before the Finance Committees of both houses we were able in a short time to get our bill reported favorably by the Senate Committee. It was with some difficulty that we got the House Committee to report. When they did do so, it was adversely. After this our efforts were directed towards presenting our case to individual members and securing a vote, the results of which have been stated. In this conection will say that we also introduced one other bill as a companion to the repeal bill, which requires doctors to report to the executive officers of the local boards of health all cases of dangerous and communicable diseases. These reports to be made in a manner to be prescribed by the State Board of Health.

This bill was being prepared by the State Board of Health when our attention was called to it. After careful consideration, and consultation with Dr. L. B. Edwards, Secretary of the Medical Society of Virginia, and other prominent members of the profession, we decided to take charge of this bill also, as stated above. This was done for two reasons: First, because we believed it was right and necessary and for the best interest of the State's public health work and in accord with the true spirit of our profession, which has always stood for progress in preventive medicine, and for everything that tends to the betterment of their respective communities; and another consideration was that other States have similar laws, and the city of Richmond has achieved wonderful success in her health work operating on this plan. Second, we believe it would demonstrate the fact that we were not altogether selfish in our demands but were seeking to enter into a mutual agreement with the State and assume these duties which naturally devolved upon us, if she would treat us with simple fairness.

This bill has passed both houses and become a law. We believe it is a step in the right direction and will meet with general approval. It may appear unfair at present, since the license tax was not repealed, but it certainly is bound to bring about a change of conditions in our favor. We believe the profession will cheerfully perform these duties, which really would require very little of their time. If this is done during the next two years, this State will realize the importance of our services and will be glad to enter into a mutual arrangement with us as the city of Richmond has done with her doctors.

Before concluding, we wish to assure those members of the profession who have so willingly contributed to the support of our work and helped us by their personal efforts, that we appreciate it all to the fullest, and thank them sincerely. Though vanquished for the present, we feel our work has not been in vain, and that success will ultimately be ours.

George A. Stover, M. D., *Chairman.*

South Boston, Va., March 12, 1910.

[Editoral Note.—We would especially ask the careful reading of the appended "Leading Points in Favor of Repealing the Special License Taxes on Physicians" as presented by the Committee of the Society to the committees of each branch of the General Assembly, and which were pronounced by even former opponents of the bill as unanswerable and convincing as to the merits of the cause. These

"Points" should be well studied by the doctors of Virginia, and preserved for presentation to their respective Legislators during the next session of the Legislature of Virginia, 1912.]

THE LEADING POINTS IN FAVOR OF REPEALING THE SPECIAL LICENSE TAX ON PHYSICIANS.

The repeal of the special license tax upon physicians is asked by the medical profession of the State.

The doctors are not seeking special favor, but just and fair treatment.

They are not pleading for charitable consideration on account of the fact that they do charity practice. This argument may be used by their friends in other walks in life if they care to do so, but the doctors, themselves, do not boast of their charity thus bestowed and feel that their case is strong enough on other grounds.

This is not an attempt to dodge paying their just share of taxes towards the support of the government, such as poll, personal, property and income taxes.

This question has been entirely changed since the last fight was made before the Legislature, two years ago. It is now presented as a plain business proposition.

The issue is between the State and her doctors, since the latter are bound to be one of the most important factors in the present system of public health work.

The relation that has come to exist between the State and the medical profession is the result of the advance in medical science during the last twenty-five years, especially along the lines of preventive medicine. The causes of the most dangerous communicable diseases have been ascertained, as well as the means for limiting their spread and preventing their recurrence.

This knowledge has been given to the world by the medical profession and it is, therefore, apparent that the doctors must play an important part in applying it to existing conditions.

This knowledge, and the fact that it is cheaper to prevent disease than to treat it, has gradually forced upon governments, both State and National, their duty with regard to the public health.

Our own State of Virginia was a little slow in taking up this work but two years ago she took a most decisive step in this direction when she reorganized her State Board of Health and created her Department of Health.

This department has done a great work, as every one knows. It has saved the State hundreds of thousands of dollars and thousands of lives.

But the success of this department, as the Commissioner of Health will testify, has been dependent on the co-operation of the individual doctor throughout the State.

Under existing laws, this co-operation has been entirely voluntary, since there is no law requiring doctors to make reports of any kind to Boards of Health.

Existing laws are, therefore, inadequate. In order to remedy this the Legislative Committee of the Medical Society of Virginia has introduced a bill (as a companion to the repeal bill) requiring doctors to make reports of communicable and dangerous diseases to the executive officials of local boards of health without compensation.

This bill, if passed, and it doubtless will be, will be the most important step in perfecting the State's system of public health work.

We will then have a system, of which the State Board of Health is the governing body, the Commissioner of Health the executive or commanding official, the local Boards of Health as sub-stations all through the State, directly accountable to the State Board of Health, and, finally, with the doctors as the primary unit of this system.

From an economic standpoint the public health work of the State is second to no other work she is doing. As an illustration, the State Department of Health issued a statement in December, 1909, that two hundred lives were saved in the State in November from diphtheria alone; the law allows the value of a human life to be $10,000, therefore, $2,000,000 were saved to the State in that month from one disease alone. It is interesting to note that this could not have been accomplished but for the work of the individual doctor dealing with these cases promptly.

The doctors will, under this system, be in fact field agents of this department of the State's work and, therefore, as much part of the system as any other official.

It is, therefore, illogical and unjust for the State to utilize the medical profession and impose the special license tax in addition.

It is not only right and fair to the profession that this tax should be repealed, but it will be to the best interest of the State, since more perfect co-operation on the part of the doctors will be secured if they feel that they have been treated with fairness. This is not intended as a threat. Most doctors will co-operate whether the tax is repealed or not, but it is only reasonable to suppose that they will do it more heartily if they feel that the State recognizes them as public servants which, in fact, they are.

As further evidence of the injustice of the license tax, only four other States in the Union impose such a tax—namely, Georgia, North Carolina, Louisiana and Delaware.

On account of the straitened condition of the State's finances the doctors are willing to waive their rights for the present and have incorporated in their bill a provision that it shall not go in to effect until January 1, 1912. This will necessitate their paying the license tax two more years. During this time the reassessment of real and personal property for this year will have taken effect and also all other measures which may be enacted by the present General Assembly looking to an increase in the State's revenue. The State will by that time be in a much better condition financially and perfectly able to get along without this unjust addition to her revenues.

The passage of this bill is, therefore, asked: First, because it is fair and right to the medical profession. Second, because it will be to the best interest of the State, in that it will make the public health work much more effective.

In addition to the foregoing, we call attention to the fact that the passage of the repeal bill and the bill requiring doctors to make reports to local Boards of Health will place Virginia on the same basis in her health work that the city of Richmond is now operating on. The Richmond Department of Health was reorganized about four years ago and the municipal tax on doctors repealed. This repeal was granted on the ground that the co-operation of the doctors was essential to the proper work of the Health Department. Dr. E. C. Levy, City Health Officer, will testify that this tax was repealed in order to secure better co-operation from the physicians and that the result has been that he has had their most cordial support. His department has done a work of great value to the city of Richmond and has done it so well that it has attracted national attention. This is additional evidence that it would be to the best interests of the State of Virginia to follow Richmond's example.

Book Notices.

Text-Book of Physiology. By WILLIAM H. HOWELL, Ph. D., M. D., LL. D., Professor of Physiology, Johns Hopkins University, Baltimore. Third Edition, Thoroughly Revised. Philadelphia and London: W. B. Saunders Co. 8vo. 998 pages. Cloth, $4.00 net; Half Morrocco, $5.50 net.

Physiologic facts and doctrines are so scattered through medical literature that it is hard for one author to collate them into one book. Besides, what seems to be proven as a fact today oftentimes is disputed or doubted or disproven to-morrow. Of course, there are many things well established, and these we should know. This revised edition of the text-book presents such facts clearly, but calls attention to many statements which, though generally accepted, are not sufficiently well *proven* as not to require further investigation, experimentation, and laboratory study. The book is systematically arranged, is a good text-book for student and practitioner; and he who adopts it may feel assured that he is adopting one of the very best of standard works on Physiology —whether for study or as a reference book.

Editorial.

Failure of Repeal of State License Taxes on Virginia Practitioners.

After much encouragement, it is yet with deep regret that we have to record the failure of success in securing repeal of State license taxes on Virginia practitioners by the General Assembly of this State, just adjourned. Early in the Legislative session, the cry of lack of funds in the Treasury of the Commonwealth

was raised—the claim being made that far more than the balances in the Treasury of the State would be required to meet expenses. But it was stated that 1910 is the census year, and that re-assessments of valuations of State properties, etc., would have to be made, and that the taxes would undoubtedly increase the revenues of Virginia after 1911. After full consideration of this statement, the Legislative Committee of the Medical Society of Virginia agreed to a compromise not to make the repeal of State license taxes operative until on or after January 1, 1912. This concession by the Committee won many friends for the repeal bill, both in the Senate and House of Delegates.

Time was necessarily lost in so amending the originally proposed bill to meet the enforced conditions. Finally, it was favorably reported by the Senate Committee, and soon afterwards also the bill got upon the House Calendar. But other matters of State-wide interest got the precedence, and soon it was decided that no bill could be taken up for consideration out of its order if three or more in either branch opposed. While it is evident that a majority in both the Senate and in the House of Delegates favored the repeal bill—as it was commonly known—under the unfortunate ruling that if three or more in either branch of the Legislature objected to taking up a bill that had not been passed by one or the other, it could not be considered, the bill had a quiet death while yet on the calendars of both the Senate and the House. Had the Legislature remained in session a sufficient length of time, and had not the unfortunate ruling above referred to been made relatively early during the session—in short had the measure secured a test vote in the Legislative branches—it does not seem that the measure would have been a failure, as the bill had undoubtedly secured a majority in its favor in the Legislature.

Too great credit cannot be given the Chairman of the Legislative Committee of the Medical Society of Virginia, Dr. George A. Stover, and to Dr. H. S. MacLean, of the same Committee, for their untiring zeal and energy in trying to secure consideration. Dr. M. J. Payne, of Staunton, and Dr. Lucien Lofton, of Emporia, also rendered valuable voluntary services. State Health Commissioner, Dr. Ennion G. Williams, and his assistant, Dr. Allen W. Freeman, as also Dr. Ernest C. Levy, Health Officer of Richmond city, gave much help to the Society's Committee.

The Medical Society of Virginia omitted to make an appropriation to meet the expenses of its Legislative Committee; hence funds had to be raised by voluntary contributions of doctors throughout the State. But the total so raised was not enough to meet expenditures. Hence, efforts have yet to be made to raise enough to refund the expenditures, and we trust contributions will be liberal enough to repay. Send such contributions to the Treasurer of the Society, Dr. R. M. Slaughter, Theological Seminary, Va., marked "for Legislative Committee."

We call special attention in this issue to the correspondence on the subject by the Chairman of the Committee, Dr. George A. Stover.

The facts that had the Repeal Bill passed the Legislature during its recent session, it could not have been effective until after January, 1912, and that the Legislators are constantly becoming better educated as to the true merits of the claim of the profession, are encouraging as to success during the next session of the General Assembly of Virginia.

Illegal Practitioners in Virginia.

Dr. Herbert Old, of Norfolk, member of the Virginia State Board of Medical Examiners, deserves the thanks of the profession for having indicted J. J. McKanna, Jr., and Charles Lincoln Smith for illegally practicing in Norfolk, in that they had not received the certificates for license to practice in this State from the Medical Examining Board. McKanna asked the court to allow him to leave the city, which it did. Smith had advertised to the public his ability to cure or relieve bodily and mental ills by his prescriptions for eyeglasses. He was charged with being an itinerant optician, but without a right to an optician's license. The judge sustained the indictment, but Dr. Old could not say that he had not been practicing in this State prior to the establishment of the Medical Examining Board of Virginia in 1885. Smith, however, will not again practice in Norfolk, as the attention of the Commissioner of Revenue has been called to the fact that it is against the State law for him to issue such parties any kind of a license. If all the Commissioners of Revenue

of the State were familiar with this law, we would soon run the fakirs out of Virginia.

The Southside Virginia Medical Society

Met in Suffolk, Virginia, on the 8th of March, with a large attendance, including several invited guests. Many interesting subjects were discussed, after which the Society was entertained at an old-fashioned oyster roast by Drs. J. E. Rawls and E. R. Hart.

The Lynchburg Medical Society.

At the monthly meeting of this Society on the 7th, Dr. James L. Kent presented the paper for general discussion on "Cause and Treatment of Otitis Media." The meetings of the Society open to the public continue to attract large and interested crowds.

Catawba, Virginia, Sanitarium for Tuberculosis.

It was unreasonable that during the latter days of the Legislature an apparently intended political sensation was attempted by the suggestion of "graft" on the part of some of the members of the State Board of Health in the purchase of the chosen site for the proposed Virginia Sanitarium for tubercular patients. The records are clear, and the parties involved in the transaction for the State are above suspicion in such a matter.

Dr. Ennion G. Williams, Commissioner of Health of Virginia, as also others of his department, have shown fine judgment in the discharge of official duties, and the results of their labors have proven remarkably successful in the prevention and abatement of infectious diseases. The anxious willingness of this Department of Health of Virginia can be tested at any time by any reasonable demands or requests or complaints.

Food and Milk Inspection.

Dr. Ernest C. Levy, Health Officer for the city of Richmond, deserves the position of eminence he has won among local health officers of the country. A constantly careful student of his specialty, and with an eye always to the improvement of health conditions of his people, he has kept up regular inspections of foods as brought to markets, and of the milk supply as presented at the dairies of this city—the result of which is apparent in the improved health conditions of Richmond. Of course, he has had troubles, which he has overcome with fairness and firmness—always ending in efforts to instruct marketmen and dairymen as how to recognize saleable products. It is getting to be a reflection upon these food sellers in any way to resist or avoid the officers in the full discharge of their duties of inspection. The local profession of Richmond heartily sustains its City Board of Health.

Close of Volume XIV.

In closing Volume XIV. of the *Virginia Medical Semi-Monthly,* it is with much satisfaction that we call attention to the Index accompanying this number. Exclusive of analyses, selections, etc., it shows that there have been 130 original contributions published during the year—representing twenty-two States of the Union. There are very few, if any of other so-called State medical journals that can show such a record. Our out-of-the-State subscribers have very generally willingly allowed us to take up much special space for the advancement of the interests especially of the Virginia profession, as we have understood them.

Several of the local societies of the District of Columbia have adopted this journal as the medium of publications of articles read before them—a compliment which we especially appreciate.

Our subscription patronage also has much increased during the past year, and we trust that the kind influences all over the country that have helped us in this respect will be continued during the new year.

Obituary Record.

Dr. Frank W. Nelson,

For many years a prominent physician of Bedford county, died at his home near Forest Depot on March 8th, after an illness of two years from heart disease. He graduated from Jefferson Medical College of Philadelphia in 1880, and was prominently identified with the Bedford County Medical Society, as also with the Medical Society of Virginia. His wife and several children survive him.

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[APRIL, 1909—MARCH, 1910 INCLUSIVE.]

VIRGINIA MEDICAL SEMI-MONTHLY.

This Index is divided into TWO PARTS—FIRST, **Index of Contributors;** SECOND, **Index of Subjects,**

Notice of books, college, deaths, journals, personals, proceedings of societies, etc., are indexed in the INDEX OF SUBJECTS under the respective words **Book Notices, Colleges, Hospitals, Journals, Obituaries, Personal, Society and Board Proceedings, etc.**

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